JULY '60

MODERN TEXTILES MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES

BIBB'S BIG QUESTION—how to grow bigger? Key men Comer, Reynolds, Train, Brumby weigh machinery costs—story page 21

THIS MONTH

TEXTILES' FUTURE—REPORT ON ATLANTIC CITY

More on level wool dyeing

Improved Antistatic Finish

AND 11 MORE TIMELY ARTICLES AND EXCLUSIVE REPORTS

"No Finer Combination"

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reactive dyes for COTTON and RAYON

PROCINYL

reactive disperse dyes for NYLON

level dyeing

versatile application

good wetfastness

good lightfastness

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MODERN
TEXTILES MAGAZINE*

July, 1960 Vol. 41, No. 7

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Established 1925

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American Association of Textile Chemists and Colorists ..... Lowell Techn. Inst., Lowell, Mass.
American Association for Textile Technology, Inc. ..... 100 W. 55th St., New York
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Man-Made Fiber Producers Association ..... 350 Fifth Ave., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association ..... 41 E. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York

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MORE THAN 3½ MILLION SPINDLES NOW EQUIPPED WITH ROBERTS HIGH DRAFT

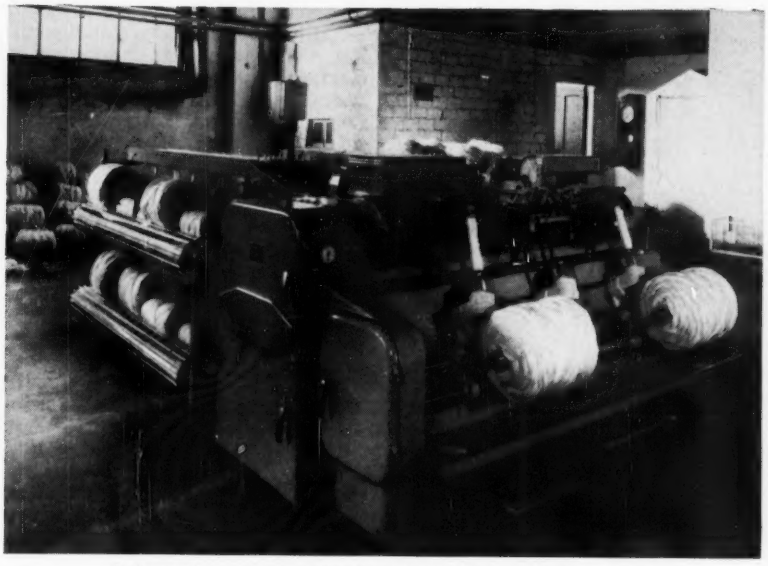
ROBERTS NEWS

PUBLISHED BY ROBERTS COMPANY SANFORD, NORTH CAROLINA

SANFORD, NORTH CAROLINA, U. S. A. 1960

Roberts enters new textile machinery field

Adds Worsted Preparatory Equipment to Line of Spinning Frames



Roberts-Tematex ParaBlender with individual ball delivery.

ROBERTS-TEMATEX PARADRAFTER • 8" wide pinning field, 88 fallers per head, flat pins • Three thread faller screws • Fallers .238" thick, pitch .354", 1200 drops per minute • Entering sliver up to 3500 grains per yard • Draft ratios 5 to 15 • Net production delivery up to 270 pounds per hour • Creels for up to 12 cans or balls or combination of cans and balls • Delivery to cans 15" x 36" up to 24" x 48" • Delivery to balls up to 24" diameter x 18" wide (26 pounds) • Hydraulic weighting of the delivery rolls • Hydraulic lifting of head for inspection • Shock absorbers for faller drops • Gradual introduction of fallers into sliver • Automatic stop motions with indicator board to show location of stoppage • Central lubrication • Simple changing of draft and pressures • Static eliminator • With single, bicoil, dual or quad delivery

ROBERTS-TEMATEX AUTOEVENER • Automatic and instantaneous correction of sliver weight • Corrects entering sliver with plus or minus 20% variation • Corrects delivered sliver weight to plus or minus 1% • Mechanical-electrical operation of the measuring, delay and variation units • Fitted only to single head, single delivery ParaDrafter • All ParaDrafter technical details apply

ROBERTS-TEMATEX PARABLENDER • All ParaDrafter technical details as above apply • Melange blending of a high number of slivers • Net Production 400 to 500 pounds per hour • Combines two ParaDrafter heads • Individual ball delivery for each head so machine can be used as two parallel ParaDrafters • Arrangement for combining and sandwich blending finished slivers onto a center ball delivery • Pressure spray oiling for center ball

Three new worsted system preparatory machines of latest design and technological improvement — ParaDrafters, AutoEveners, and ParaBlenders —have been added to the Roberts Company line under the name Roberts-Tematex.

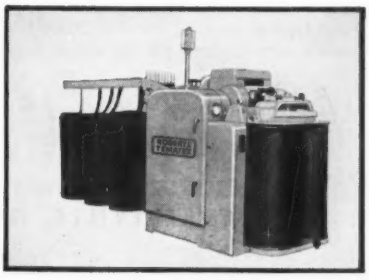
They are used in yarn spinning mills as well as in combing and top making plants to pin, parallelize, draft, and blend worsted and other long staple fibers in operations that precede roving and spinning.

Roberts-Tematex machines are considerably more rugged than other machines which are available, hold their settings well and provide high production performance.

The *ParaDrafter* parallelizes and drafts the fibers and can be combined with the *AutoEvener* which automatically evens the weight of the delivered sliver through electronic and mechanical means to within ±1%, from an entering weight variation of up to ±20%.

ParaBlenders also parallelize and draft but in combination with a blending operation that provides many doublings and sandwich blends the fibers.

PARADRAFTER arranged for can feed and dual delivery.



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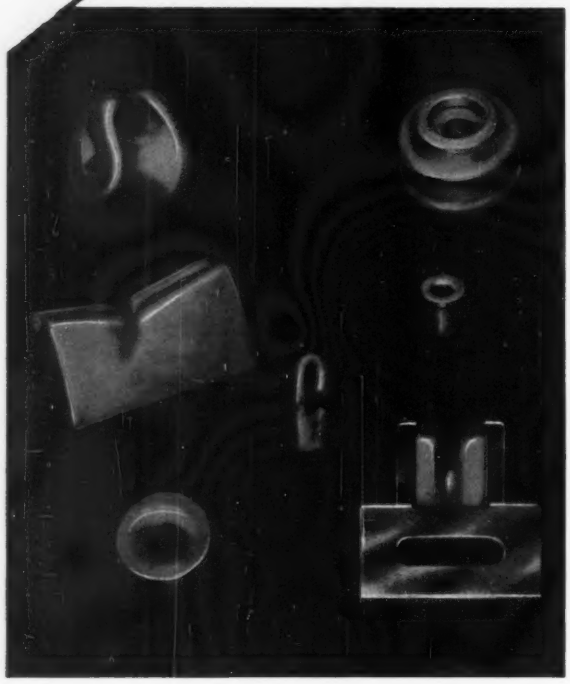
NEW A-70 ALUMINUM OXIDE GUIDES BY LAMBERTVILLE!



Why do A-70 Aluminum Oxide Guides LAST LONGER?

Lambertville Ceramic has developed an unique, revolutionary process in which micron-sized grains of material are fused in a manner that increases hardness, *gives maximum resistance to wear.* In addition, the resulting exceptional smoothness—heretofore unknown in Aluminum Oxide Guides—diminishes friction-caused damage to the yarn. A-70 Guides can be made in practically any standard guide shape. Send for free samples, for comparison with your present guides. (Specify shapes.)

70 Aluminum Oxide

Lambertville Ceramic AND MANUFACTURING COMPANY
LAMBERTVILLE, NEW JERSEY

LAMBERTVILLE: YOUR GUIDE TO BETTER OPERATIONS!

Nylon Tire Outlook Weighed

Use of nylon tire yarn in the original equipment passenger tire field will increase sharply in the next two years, according to Edward A. O'Neal, Jr., president of Chemstrand Corp.

This yarn market currently, is about 98% served by Tyrex, a rayon yarn used in tires of virtually all 1959 and 1960 model cars. Since last summer, nylon producers have cut prices twice, apparently in moves to win over car makers to nylon cord tires. Tyrex makers matched both price reductions. O'Neal said Chemstrand thinks the trend to lower nylon tire yarn prices since 1955 "will probably continue . . . but at less sharp rate."

Greenville Show Shaping Up

Current increased capital outlay for plant modernization will be reflected at the 21st biennial Southern Textile Exposition to be held in Greenville, S. C., October 3 through 7. According to Miss Bertha M. Green, this year's exposition promises to measure up to previous shows, from the standpoint of number of exhibitors, and importance and variety of exhibits.

Resulting from requests by many exhibitors, the Textile Hall Corp., which sponsors the exposition, this year will supply personalized admission invitations, instead of single admission contract tickets, as in the past. These invitations will be distributed by the exhibitors to customers and prospects and will serve as both registration card and badge insert. Exhibitors will have until August 1 to order the invitations.

False-Twist Litigation

A French Court of Appeal at Lyon, France, decided in favor of Manivet S.A., Lyon, the defendant in an action brought against it which originally alleged infringement of two patents, one in the name of Heberlein and one in the name of Billion. The Heberlein patent had already been judged invalid through non-utilization. The Billion patent had been judged infringed in a Lower Court, but this decision was reversed on appeal, on presentation of fresh technical evidence by Manivet. Manivet S. A. is one of the few independent throwsters which never joined the Helanca family of licensees. Observers believe the decision will cause a complete re-appraisal of the general situation regarding patents covering false-twist crimping in Europe.

Textile Machine Works Diversifies

Textile Machine Works, Reading, Pa., manufacturer of full-fashioned hosiery knitting machinery, recently marked completion of a 5-year product diversification program with a week-long "open house." The firm 5 years ago relied on full-fashioned hosiery machines for about 85% of sales; now such machines account for less than 15% of the company's total business. The firm's work force at Reading is now over 3,000. Some 900 employes having been added in the past 9 months, indicating the company's progress into general metalworking diversification.

Textile Machine Works was founded in 1892 in Reading by Henry Jannsen and Ferdinand Thun to make braiding machinery. In 1898, the first full-fashioned hosiery knitting machine was produced by the shop. In 1952, TMW purchased the Arrow Needle Co., Manchester, N. H., a manufacturer of latch needles and related flat stock. Arrow Needle activities have since been consolidated at the main plant where the function has become a part of the Wire Products Division. In 1959, a line of porcelain cast-iron cookware was obtained from the Prizer-Painter Stove Works, Reading, and made a part of the Foundry Division.

Contract design, engineering, foundry, and machining operations, plus consumer products, now make up a major part of the company's activities.

BLACK AS

BLACK SOLUTION-DYED

The fastest black known to science makes its bow in America's most advanced self-care fiber — Vycron polyester. Black solution-dyed Vycron is available for immediate delivery in 1½ and 3 denier staple for wash-and-wear fabrics and polyester and wool or worsted blends. Now, for the first time, fabric stylists have a new styling "tool" for developing fresh, original, more definitive patterns in fabrics made with polyester.

*Vycron**

POLYESTER FIBER

AMERICA'S MOST ADVANCED SELF-CARE FIBER

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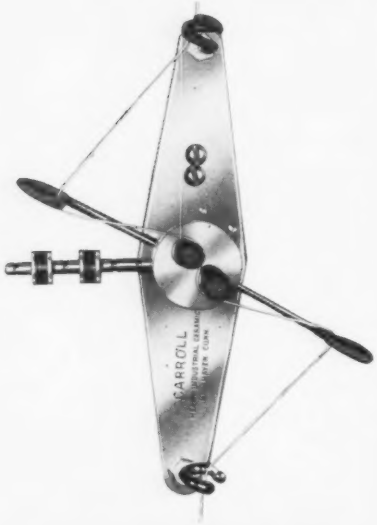


THE
CARROLL
REDRAW TENSION

This tension device was an original development by Heany to redraw nylon directly from the pirn at normal speeds and up to 450 or 550 yards per minute. It will hold tensions very closely in a range of ½ gram up to about 20 grams for special purposes.

ADVANTAGES

- Eliminate Pirn Marks
- Self Cleaning
- Faster redraw speeds
- Long wearing Heanium Parts
- Gravity principle
- Visual in operation
- Simple, fast adjustment

"Your guide to lower costs"

HEANY INDUSTRIAL CERAMIC CORP.
NEW HAVEN 3, CONNECTICUT

Southern Representatives: R. L. Carroll, P. O. Box 1676, Greenville, S. C.

Singer Buys Fidelity

Fidelity Machinery Co., Philadelphia, Pa. has been purchased by Singer Manufacturing Co., producer and distributor of household and industrial sewing machines as well as other electrical equipment. Singer will operate Fidelity as a subsidiary of its Special Products Division. Singer said the purpose of the acquisition is to meet the worldwide demand for the Fidelity 400 needle seamless hosiery machine.

New Dacron Plant in Use

Du Pont's new multi-million dollar plant at Old Hickory, Tenn., has begun production of Dacron polyester fiber. The facility adjoins the company's rayon and cellophane plants and a recently completed unit which is making dimethylterephthalate—the principal ingredient used in the manufacture of Dacron. When the plant reaches peak production, it will be capable of turning out 56,000,000 pounds annually of Dacron staple and filament products. This figure is included in the current and projected capacity for Du Pont's new fibers which will approach 600,000,000 pounds annually sometime during the 1960s. Initial output at Old Hickory will be almost exclusively 1.5 denier Dacron, which is specifically designed for use with cotton in blends.

Form Australian Firm

Allied Chemical and Polymer Corp. (Pty.) Limited, of Australia, plan to form a joint company, Allied Polymer Pty. Ltd., for the manufacture, initially, of nylon tire cord, monofilament and molding compounds. Allied Chemical pioneered the manufacture of nylon 6 in the United States. Polymer Corp. is a leading producer of organic chemicals and plastics with plants in Sydney, Australia, and Auckland, New Zealand.

New Bondyne Distributor

Iselin-Jefferson Co., selling agent for a group of textile mills, has been licensed to develop production and handle distribution of a wide range of Bondyne fabrics for men's, women's and children's apparel, and decorative home furnishings fabrics. Gerard A. Sager will direct Bondyne fabric sales for Iselin-Jefferson.

The exclusive constructions, to be sold in the greige to converters for the spring 1961 market, will be produced by Woodside Mills, Bibb Manufacturing Co., and Shelby Mills. Principal advantage of the Bondyne fabric construction, says Iselin-Jefferson, is the press retention and wrinkle resistance it imparts to finished fabrics. *For further information write the editors.*

Chemstrand Unit Moves

The Chemstrand Corp. Engineering and Development offices will be consolidated at Decatur, Ala., in facilities to be vacated by the Chemstrand Research Center move to North Carolina. The consolidation will involve relocation of about 100 persons now based at the Chemstrand nylon plant at Pensacola, Fla. Groups affected by the move will include engineering, engineering and development accounting, and engineering project purchasing. Personnel assigned to Chemstrand's new nylon development center at Pensacola will not be affected by the move.

Nopco Isocyanate Plant

Nopco Chemical Co. has acquired a process and completed plans to construct a plant in New Jersey for the production of isocyanates. The new facility, with an initial capacity of 10 million pounds which can be doubled, is expected to go on stream by January, 1962. Total capital requirements for the unit will be around $7 million.

The company reported that entry into the isocyanate field will improve its competitive position in urethane foams and broaden its position in the chemical world. The plant's major production will be toluene diisocyanate, the basic raw material for the urethane foams produced by the company's plastics division.

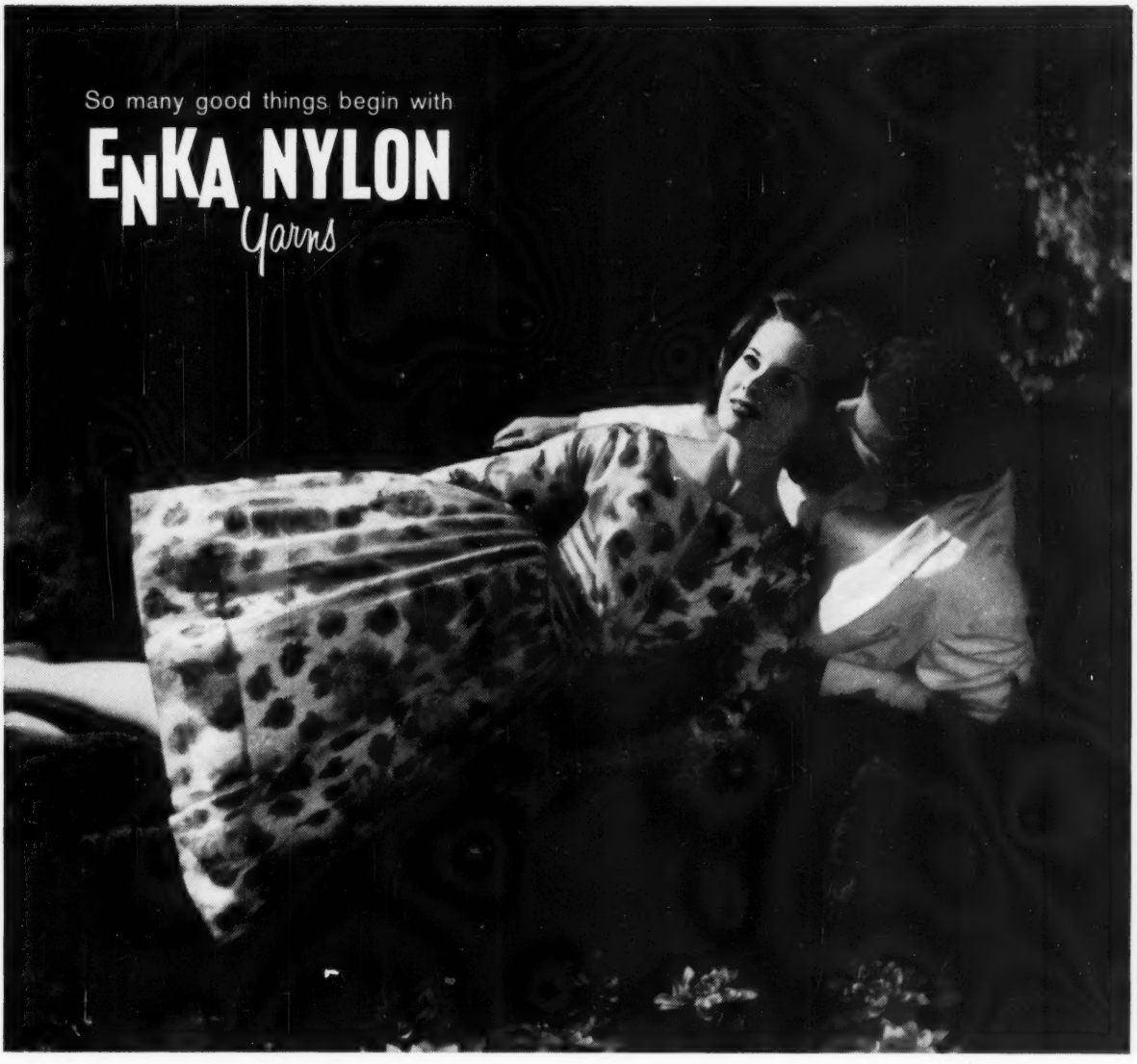
Nopco's wholly-owned subsidiary, Nopco Chimie, S.A., at Fribourg, Switzerland, has acquired a half interest in the French chemical firm, Doittau-Sopura, S.A., near Paris. Three hundred thousand dollars were involved in the transaction, the company's newly-formed International Division announced. Doittau-Sopura will produce the complete line of Nopco chemicals for distribution in the European Common Market.

Geigy Moves Chicago Office

Geigy Dyestuffs, division of Geigy Chemical Corp., has moved its Chicago branch office to a new building at 5677 North Northwest Highway. The division reports that the former office it had maintained for 14 years near Chicago's Loop had been outgrown by the expansion of the company's business. Warran B. Broadbent is manager of the Chicago branch.

Heads Acme Backing

Norman L. Freydberg has been elected president of Acme Backing Corp., replacing Ralph M. Freydberg, former president, who is now chairman of the board. Other officers elected include: Everett R. Jenkins, senior vice president; Melvin Wagner, vice president, and Sidney Weisberg, treasurer.



Why you should specify ENKA NYLON

Enka nylon is a different nylon—in its molecular structure. This results in yarn which has a greater absorbency and affinity for dyes to produce deep, true, vibrant colors. Enka's 30 denier nylon is produced *especially* for the sheer market in a larger filament size to produce a smoother fabric with a greater versatility of hand, which can be readily controlled during the finishing process. Enka has been telling the advantages of these differences to mills, converters, retailers and consumers. This story became a success story this Spring—the kind of story that has made the trade sit up and take notice. It can be your success story, too.

The creative Enka research organization is constantly working to develop the new and exciting novelty fabrics and yarns which add zest to sheers. Working in close conjunction with mills, experiments are constantly being conducted on color, texture and pattern effects that have the "new look" in sheers that fashion is ever-seeking.

And, as sheers are important to you, they are important to Enka. So important, in fact, that Enka promotes them extensively through all channels of distribution. For holiday 1959 and Spring 1960, Enka ran 25 consumer ads, 150 merchandising trade ads and mailed 184,000 brochures on nylon sheers. And that's not counting Enka's tremendous publicity campaigns, or in-store merchandising.

Find out how you, too, can profit by changing to Enka nylon. Call Enka Merchandising at 350 Fifth Ave., New York 1, N. Y. PEnnsylvania 6-2300. Or, contact the Enka Sales office nearest you.

CHATTANOOGA: 871 McCallie Ave., Chattanooga, Tenn., AMherst 6-2134
GREENSBORO: 428 Jefferson Std. Bldg., Greensboro, N. C., BRoadway 2-0114
PROVIDENCE: 2009 Industrial Bank Bldg., Providence 3, R. I., GAspee 1-2494

American ENKA Corp., Enka, North Carolina • Producer of rayon • nylon • yarns • fibers

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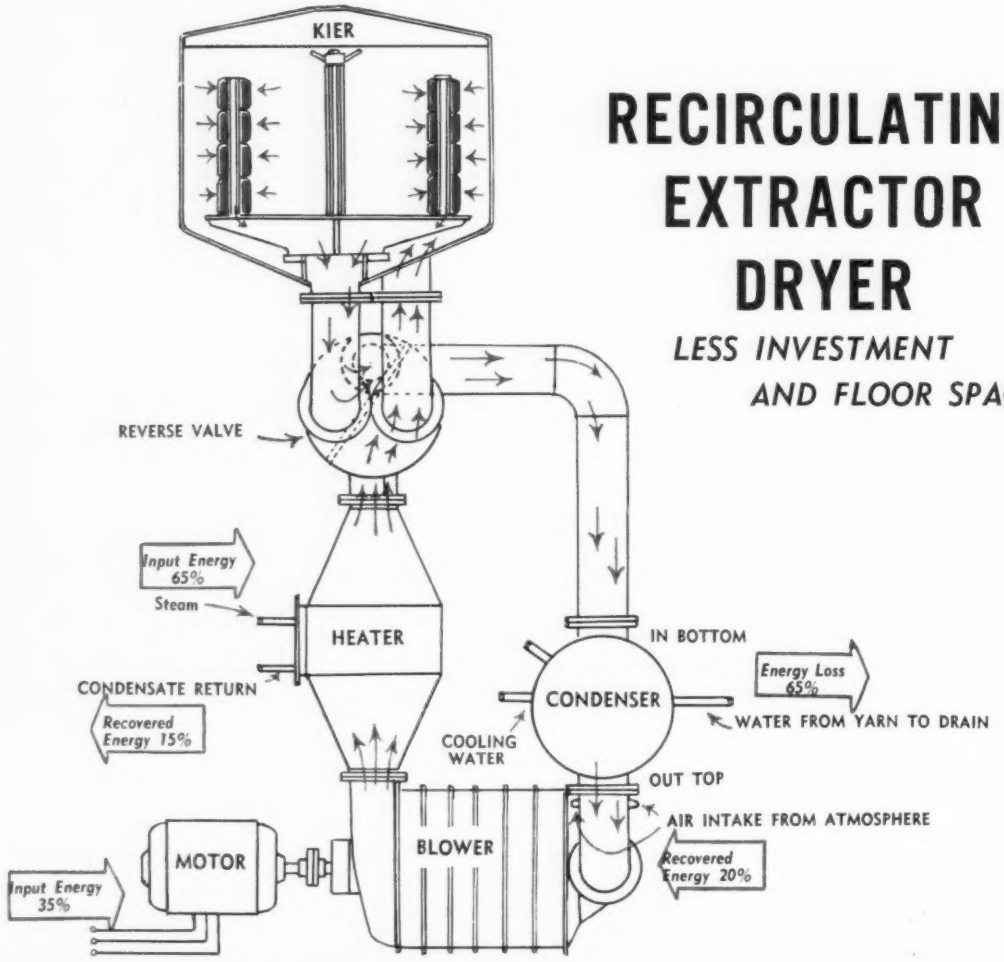
You name it—



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LESS INVESTMENT AND FLOOR SPACE

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Gaston County Dyeing Machine Co.

WORLD'S LARGEST PRODUCERS OF PRESSURE DYEING & DRYING MACHINERY

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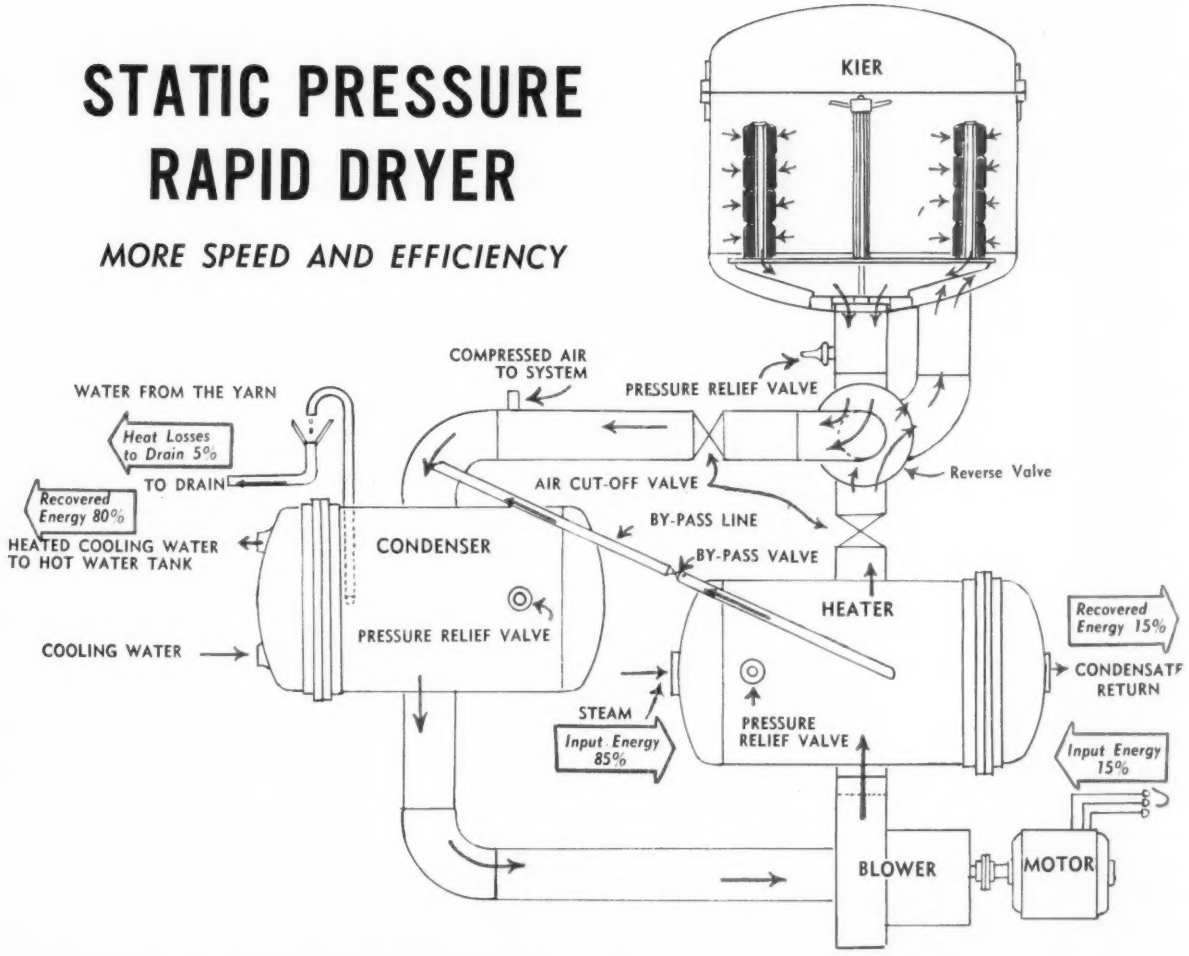
STATIC PRESSURE RAPID DRYER

MORE SPEED AND EFFICIENCY



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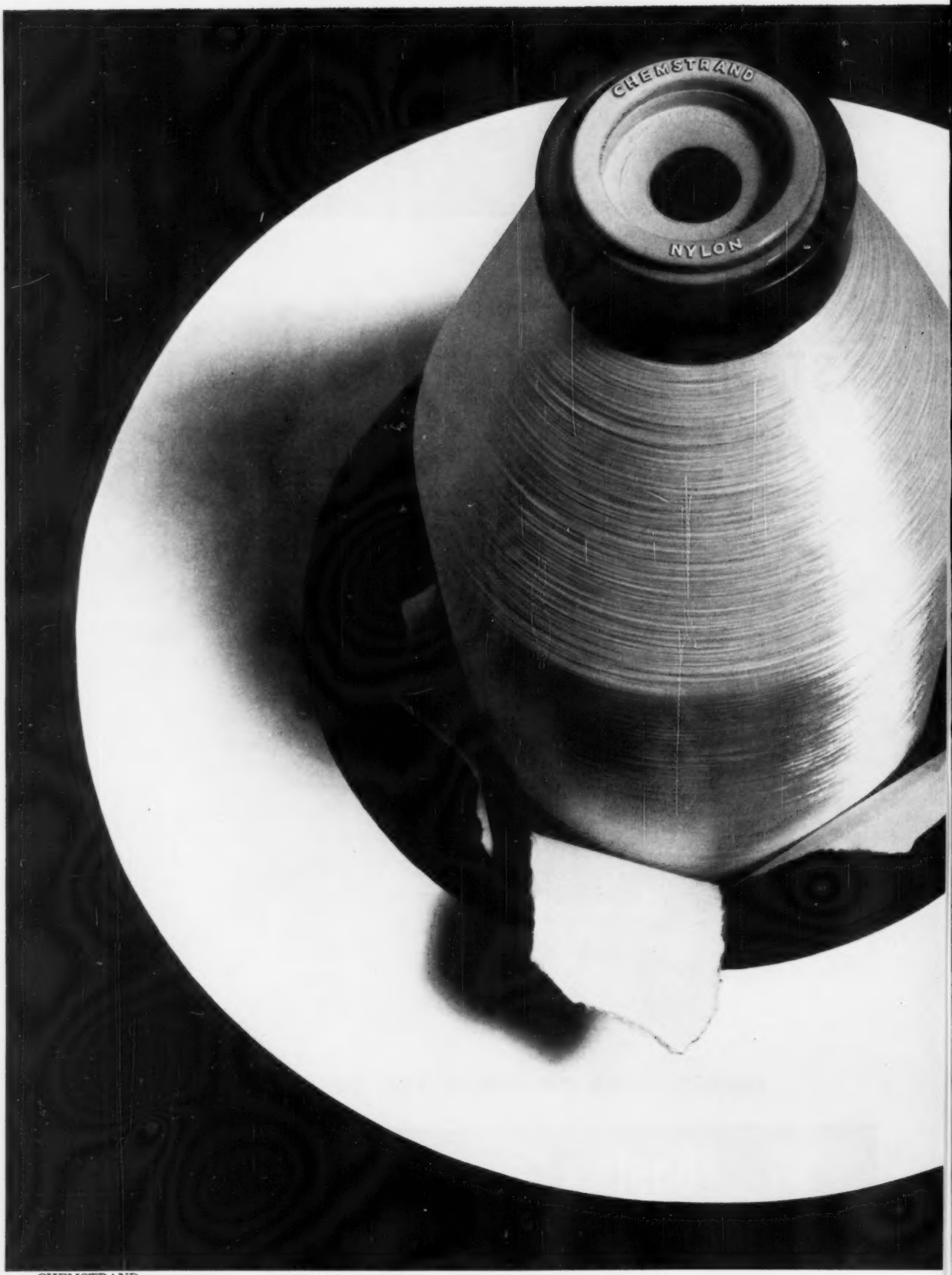

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From Chemstrand comes CADON*!

The new multilobal NYLON yarn that lets you do more than ever before!

Knit it, weave it, dye it, print it—for dresses, blouses, lingerie, sleepwear, uniforms, outerwear shells, sweaters, sport shirts, beach and swim wear and all types of linings! The multilobal cross-section of new Cadon nylon yarn opens a wide range of fabric and styling opportunities because:

1 Cadon's appearance is lustrous, richly smooth; makes knits and woven fabrics different.

2 Cadon's covering power is greater than round-section yarns; gives opacity to permit lighter-weight fabrics.

3 Cadon's surface is perfect for printing; takes delicate or strong patterns and holds them sharply.

4 Cadon's wicking properties are excellent; moisture is spread for fast evaporation to insure greater comfort.

5 Cadon's hand is something special! It's springy, almost alive. You can't describe it—you have to feel it!

Most importantly, Cadon has been thoroughly tested under commercial conditions during an extensive (and intensive) development period. To learn how Cadon fits into your line, call your Chemstrand representative. He's got the whole story on this new and exciting yarn.

Cadon nylon by Chemstrand

CHEMSTRAND NYLON

*Trademark of The Chemstrand Corporation for multilobal nylon yarn.. *Chemstrand makes only the yarn; America's finest mills and manufacturers do the rest*

South Hill St., Los Angeles 14. Canadian Agency: Fawcett & Co., 34 High Park Blvd., Toronto, Canada • PLANTS: CHEMSTRAND® NYLON—Pensacola, Fla.; ACRILAN® ACRYLIC FIBER—Decatur, Ala.

Inspection check point; 3° 30' cone production.

The challenge of synthetic yarns—met by Sonoco!

The advent of filament yarns presented a unique challenge to the industry. Packaging and production problems *had* to be solved before the yarn could be processed. However, as always, Sonoco was ready with dependable, economical paper carriers. Sonoco *anticipated* the industry need and developed a completely new cone especially for man-made yarn—the now-famous 3°30′ cone.

Sonoco 3°30′ cones are available with smooth, Velvet or Unitex Surfaces. They are made in gray and many other solid colors. Colored lacquer tips, lacquer rings or lacquer dots, and other special finishing, can be specified by the customer.

Sonoco 3°30′ cones are typical of the dependable products manufactured by a fully integrated company with 60 years' experience in creating and producing all types of paper textile carriers. *Only Sonoco,* in its field, provides the necessary knowledge, skill and capacities to meet the ever-changing techniques of the textile industry. *Let Sonoco experience help you!*

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Products for Textiles

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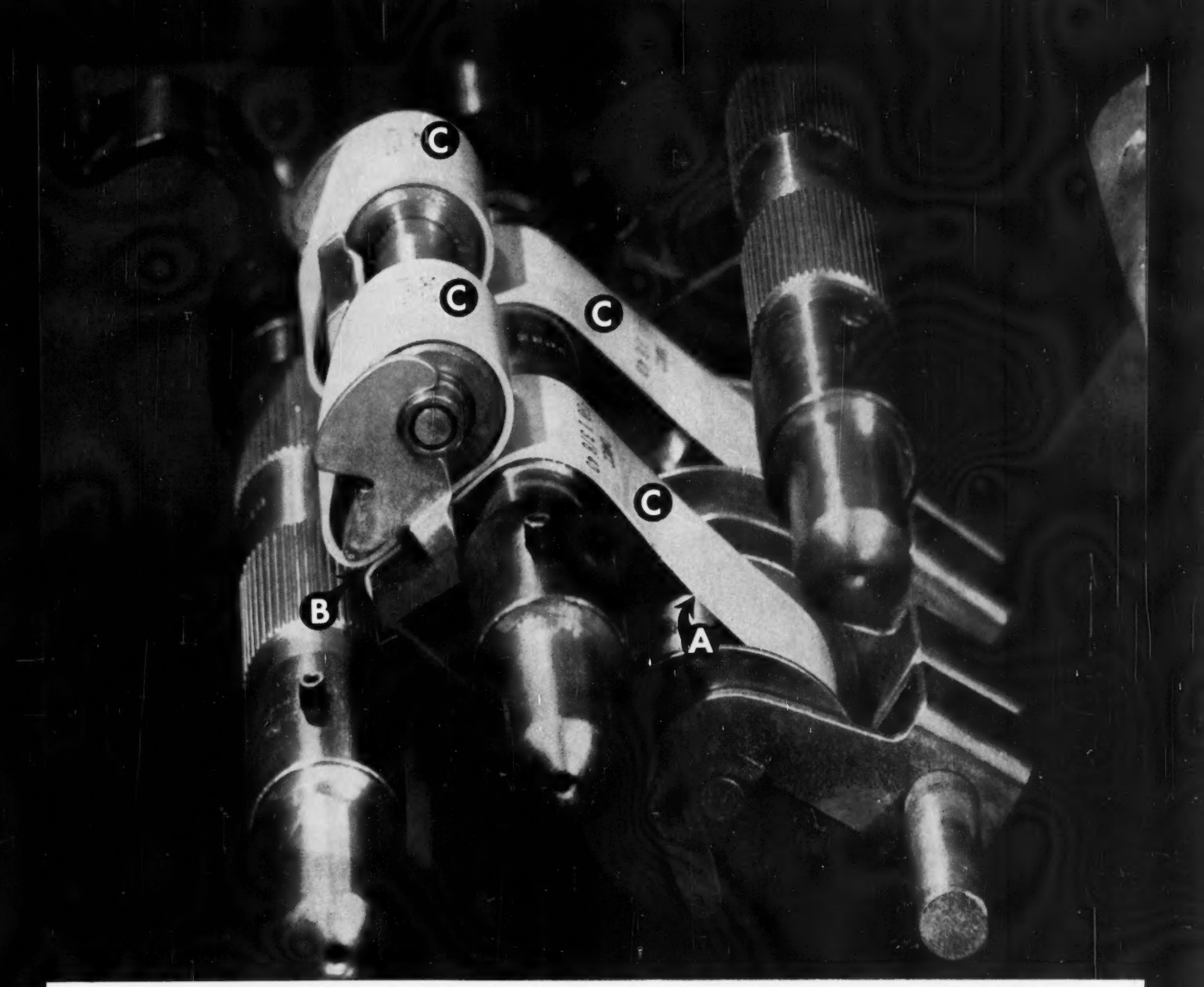
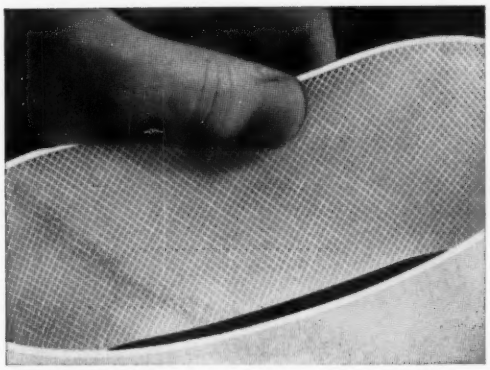


ACTUAL WORKING MODEL of long-apron system shows: (A) Patented embossed surface for precise coefficient of friction and abrasion-resistance formulated to last for years; (B) Unmatched flexibility at nose-bar for consistently smoother performance and top quality yarn; (C) Guaranteed yarn control due to a cleaner spinning outside surface

NEW RECORD-BREAKING SPIN-AND-WEAR PERFORMANCE

with Dayco on any Apron System



EXCLUSIVE . . . patented by Dayco . . . your only source for this important friction-right improvement in aprons that made possible lower power and increased production. It's another example of Dayco's continuous research program to increase economies and production.

For super-quality yarn—consistently, nothing matches Dayco's patented Embossed Apron for long-apron systems. Here's super-smooth drafting action—unequalled flexibility and precision friction surfaces on both sides to meet all conditions. No more tucking or jamming at the nose-bar . . . no more ozone breakdown . . . no more abrasive problems for months and months.

Improve your yarn quality . . . up your spinning performance with the pioneer and leader in the field—Dayco!

Ask your Dayco Representative to set up a trial installation. Phone or write Dayco Textile Products Co. (Formerly Dayton Rubber Co. Textile Division) 401 S. C. National Bank Bldg., Greenville, S. C.

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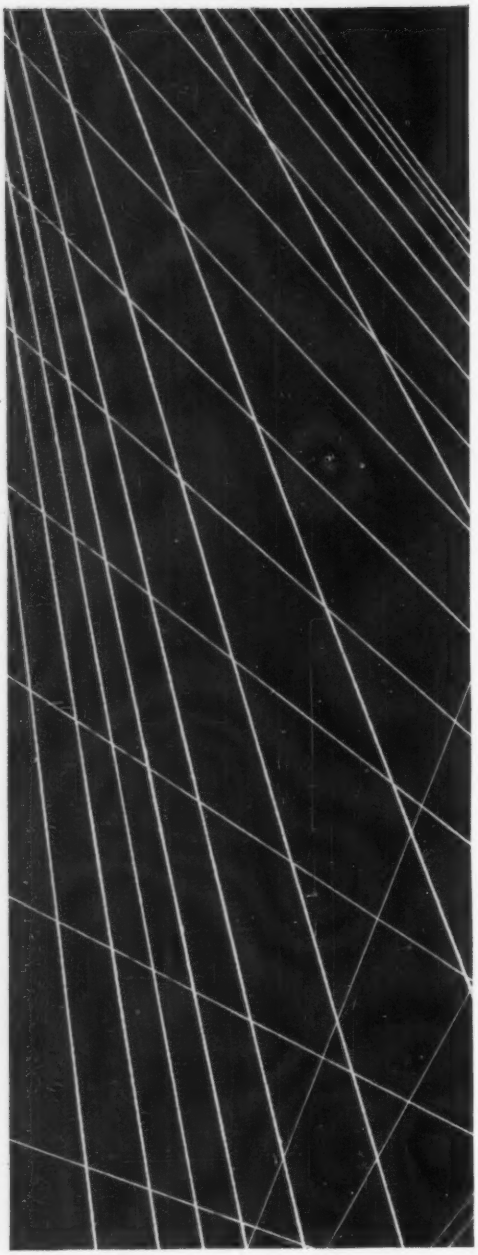

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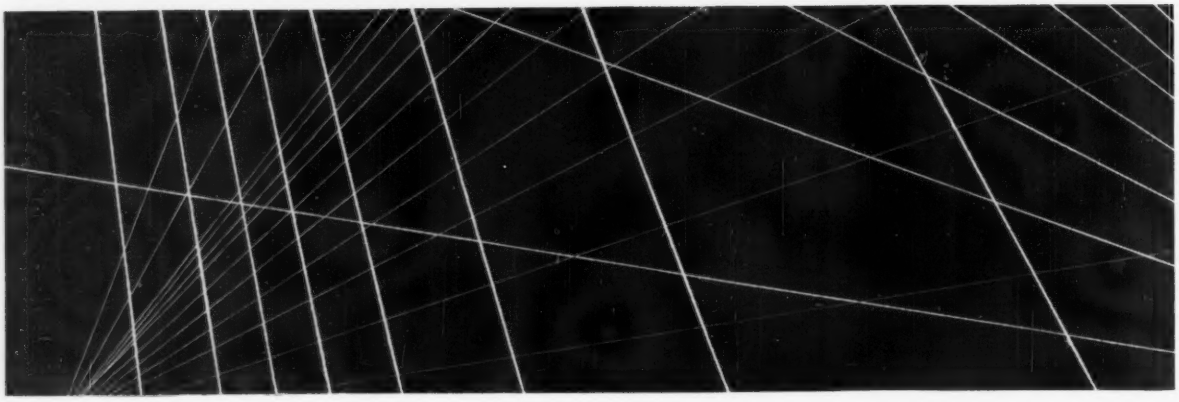

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MODERN TEXTILES
Magazine

Publisher's Viewpoint

A New Service for Our Readers

The manmade fiber industry is growing more and more varied, and its component elements more complicated. With every passing month new names for new fibers or variants on old fibers are announced. Latest to reach our desk is Orlon Type 72 staple fiber—Du Pont's ninth addition to its line of Orlon acrylic staples. Then there's Fortrel, Celanese's new polyester, Zantrel, Hartford's new "polynosic" rayon, and Prolene, Industrial Rayon's new olefin, to name only a few of the more recent additions to the fiber glossary. We could go on and on.

With all these new fibers appearing, it is no secret in the textile industry that everyone is confused with the possible exception of a few sharp minds on yarn producers' staffs who keep up with at least their own company's fiber names. A case in point is a recent experience of ours. We found ourselves sharing a table with three buyers of leading department stores from several parts of the country. The occasion was the sprightly Deering Milliken breakfast show. Talk turned to the question of fiber identification. We asked the ladies how many new fibers they could name and define. Although they were as keen-witted as only store buyers can be, they were forced to admit that they could not define one. Who can blame them? To keep up with the new fibers today is a full-time job. But most of us have other full-time jobs. The sad truth is that confusion and lack of understanding and plain ignorance of these fibers and their brand names and generic classifications are widespread.

In our September issue, with the cooperation of the manmade fiber producers, we plan to do something to clear up this confusion, and make available to all in the textile and allied industries a reliable source of information, providing, at a quick glance, the essential facts about American manmade fibers. This will be a special section, our "Deskbook of Manmade Fiber Facts."

Intended as a reference book that mill people, converters, dyers and finishers, and a broad range of others in the textile industry will keep on hand for 12 months a year, the Deskbook will provide accurate, simple directions of manmade fibers and identify their makers and their special properties and their uses in fabrics.

The Deskbook will also contain our annual, unique and deservedly famous Tables of Denier Numbers and Filament Counts of Manmade Fibers. This year, the tables will appear in the special pull-out section started several years ago, but enlarged and in bigger type so as to be more easily consulted than ever. And, of course, our September issue will contain our monthly presentation of the prices of the leading American manmade fibers and yarns.

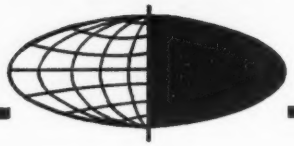
Adding all three of these features together, September's MODERN TEXTILES MAGAZINE, we believe, will be a true Deskbook of Manmade Fiber Facts providing the textile industry with what we hope will be an invaluable reference book for daily use in the business—dear to all our hearts—of using manmade fibers in better textile products for the good of American consumers.

New Triumphs for Manmade Fibers

The fact that manmade fibers are gaining ground not only in the United States, but throughout the world, is brought home with dramatic emphasis by the latest figures compiled by the Textile Economics Bureau. World output of manmade fibers last year, according to the Textile Organon, the Bureau's bulletin, reached the all-time high of 7,010,000,000 pounds, 16% above 1958 and 8% above the previous high in 1957. The 1959 figures include 5,560,000,000 pounds of rayon and acetate, an increase of 11% over 1958, 1,268,000,000 pounds of non-cellulosic fibers up 38% over 1958, and 182,000,000 pounds of textile glass fiber, an increase of 43%. Here indeed is further proof that the future of textiles belongs to the manmade fibers.

A. H. McCullough

TEXTILE NEWS



World Wide

WORLD TEXTILE TRADE continues to show both sides of the coin at the same time. The 16th session of the members of the General Agreement on Tariffs and Trade meeting in Geneva, came up with a report scoring cheap-labor incursions into certain European markets from Hong Kong and Red China.

Another GATT report urged the United States and other industrialized nations to ease barriers on imports of textiles from underdeveloped countries. That many underdeveloped lands also have comparatively cheap labor went officially unnoticed.

JAPAN'S TEXTILE MEN plan new links with firms in foreign countries. Polyethylene plants would be established in Japan by Nitto Chemical and Union Carbide—to make 59.4 million pounds of chemicals by 1961—and by Mitsui Petrochemical and Du Pont—to produce 27,000 tons by 1962. Mitsui, incidentally, works with Toyo Rayon which makes nylon under Du Pont license.

OTHER JAPANESE FIRMS map other agreements. Nissan Chemical and Idemitsu Kosan are planning to manufacture polypropylene synthetic fiber and plastics under a Montecatini license. They would make 5,000 tons each of fiber and plastics. Kurashiki Rayon, meanwhile, is getting set to license a Yugoslav firm to make Vinylon polyalcohol fibers. If accomplished, this would mark Japan's first textile pact with an East European country.

GERMAN-INDIAN COMPANIES have gotten together to build a nylon plant in Bombay. The Indian Government has granted a charter to Bombay Nylon Spinners, backed by a German firm and R. M. Khanna Rajkumar Soni of Pearl Woolen Mills. Some 2.35 million pounds of nylon yarn and staple would be produced annually. Output starts in 1961.

SYNTHETIC PAPER CLOTHING may be offered late next year by a German firm, Feldmuehle Papier & Zellstoffwerke, Duesseldorf. Initially, the synthetic fibers, which purportedly could be turned into clothing, would be used as electric insulation.

BAYER FARBENFABRIKEN will inaugurate all-out production of the continuous filament yarn acrylic, Dralon. Some 40 tons monthly will be produced, starting in about 12 months.

FABELTA OF BELGIUM, too, is getting ready to manufacture a number of acrylic fabrics, according to P. E. Maes, commercial director of the Ghent firm. Toward the end of 1960, a new fabric, to be called Acribel, will be launched.

AND A NORTH IRELAND FIRM will construct a new plant, at Ballyclare, to spin yarn from acrylic fiber. The company is Jeremiah Ambler, a mohair and worsted spinner and pressed cloth maker at Bradford. The new plant will probably make hosiery yarn by a turbo spun process.

BRITISH RAYON COTTON groups have announced they will merge. They are the Rayon Weaving Association and the Cotton Spinners and Manufacturers Association. The aim is to encourage closer integration between employers' organizations in both industries. The merger follows completion of Britain's government-backed program to strip down and modernize the cotton textile industry.

HOLLAND'S BIG AKU (Algemene Kunstzijde Unie) is building a polyester plant in Spain and a nylon plant in Mexico. It is contemplating forming a joint Dutch-American glass yarn plant somewhere in Western Europe.

PARIS WOULD BE HEADQUARTERS of world manmade fiber activity. This is the goal set for itself by the International Committee of Manmade Fiber Producers which recently held its 10th annual general assembly. The group includes 80 firms from 20 countries. It represents 57% of the world's manmade fiber output which is estimated this year at 3,350,000 tons. Pierre van Gehuchten, of the committee's executive, explained the group does not intend to take over any other body.

WORLD MANMADE FIBER SPOKESMAN forecasts future of industry. Van Gehuchten, at the ICMFP's 10th meeting also stated: "Staple fiber has hitherto been produced in cuts and staples adapted to existing textile machinery, conceived in relation to the dimensional limitations of natural textiles. It might break free of these servitudes and create machinery and technics of its own. Possibilities of nonwoven or bonded fabrics should not be underrated."

On The Agenda: new and different products, modernized equipment

Bob Train and his team plan for Bibb's Bigger Future

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

BIBB MANUFACTURING CO., a big textile operation by any standard, is looking to grow bigger in the future. Bibb's rough-hewn, energetic self-effacing president, Robert Train, thinks that the determination to grow, to diversify into new products and to revitalize manufacturing methods by adding modern equipment is the best thing the company has to offer its ambitious young men on its management and sales staffs.

In the years since it was first established in 1876, Bibb has been heavily engaged in the production of industrial fabrics and yarns, along with such workaday products as cotton carpet warp yarns, although in the past decade or so under the leadership of its former president and board chairman now retired, Charles C. Hertwig, it established itself prominently as a spinner of face yarns for the carpet tufting industry. Now the company, long regarded as a rough-and-ready "plain Jane" of the textile industry, is moving toward further diversification under Train's leadership.

Bibb is currently doing fine, Train points out, but there is nothing complacent in his attitude toward the company, its problems and opportunities. A steady move forward to new levels of strict and uncompromising modernization of manufacturing equipment along with an open-minded receptivity to new products in altogether new areas of textile manufacturing is Train's optimum program for Bibb's future. But neither he nor other men on Bibb's exceptionally able management team deceive themselves that this program will be easy to carry out.

For one thing, modernization of a big mill these days is terribly expensive, Train points out; and how to get the money to bring the company's mills up to the most advanced level of modernization, is a knotty and worrisome matter.

Bibb, of course, from the viewpoint of modernity of equipment already stands at a point which many other mill managements might envy. In the last six years, the company has spent $16 million for replacing old equipment with modern, brand new machines, and for increasing plant capacity. Train sums up this modernization program so far by saying that some 200,000 of Bibb's total of 251,000 spindles are very modern. Behind this updated spinning equipment is equally modern picking, carding, roving, drawing and warping machinery. The balance of the equipment in Bibb's 12 mills is "medium modern" as Train puts it, and the company is eager to update it.

As equipment has been modernized, Bibb has been successful in diversifying away from its former heavy reliance on tire cord, and other industrial yarns and fabrics, and carpet backing yarns. Hertwig opened the door to moves in this direction a decade ago when he saw the big market potential in the then fast-growing tufting industry. Bibb is by now well established as one of the major producers of yarns for tufted carpets, bedspreads and rugs, as well as yarns for a wide variety of other knitted and woven fabrics.

The importance of the tufted carpet market to Bibb is illustrated by the fact that, noting the recent turn of tufters toward the use of wool yarns, Bibb, traditionally a cotton operation with all its mills located in cotton-oriented Georgia, took a bold step. To get into the unfamiliar woolen yarn business, it bought a small spinning plant from the Thermoid Co., in Trenton, N. J., moved it south into a former cotton mill in little Forsyth, about 20 miles from Macon, strenuously modernized the equipment and is now profitably spinning excellent woolen carpet yarns. Heart of the new mill is eight shiny new Davis & Furber variable speed cards delivering neatly packaged roving for transfer to the spinning frames.

Apparel Fabrics Added

Other new lines added by Bibb in recent years have been apparel fabrics of cotton and synthetic blends; cotton-rayon blends for upholstery and drapery uses. Also in Bibb's traditionally important area of industrial fabrics, management has added nylon fishing twine and high tenacity rayon and nylon yarns for such uses as conveyor belting.

These new products are, in Bob Train's opinion, not enough. He and his associates in Bibb's management are on the look-out for still newer products with a fair chance of bringing in a decent profit. But as every millman knows, to find such new products is not easy. Some of the difficulties with developing new products is illustrated by Bibb's experience with textured yarns for the carpet tufting trade. Several years ago the company obtained a license from the Spunize Corporation of America to make textured yarns for the tufting trade. After a great deal of hard work and expense, Train was beginning to be hopeful that the new venture would turn out to be a source of profit when Du Pont, followed by other nylon yarn producers, decided to texture their own yarns and sell them directly to tufters. This movement has, to put it mildly, taken the wind out of Bibb's texturing effort and Bob Train is not happy about it.

Open to New Ideas

There will be, however, other possibilities for new products popping up in the future, Train feels, to offer a challenge to the mills ready to take a long chance with their money and their research and development skills. Bibb, he is determined, will be receptive to such new product opportunities because he and the rest of Bibb's key men feel that growth and product variety is a necessity for the company that intends to survive, to grow and to prosper in today's rugged textile business climate.

Robert Train, the man who as president of Bibb exemplifies its determination to fight its way forward to greater productivity and increased profits for stockholders, is a grandson of one of the founders of "The Bibb" as they call it affectionately and familiarly in Macon, Porterdale, and Columbus, Ga., where its major plants are located. Train was born in 1913 in Savannah where his father, Dr. John Kirk Train, practiced medicine. He attended the Episcopal High School in Alexandria, Va., from 1927 until 1932.

Among his classmates during those years, he likes to point out as a curious fact, were three other young men who in later years, like himself, became presidents of textile mills. They are, we note for the sake of those interested in coincidences, Robert Small, president of Woodside Mills, Henry Swift, president of Swift Spinning Mills in Columbus, Ga., and W. C. Vereen, Jr., president of Moultrie Cotton Mills. From this swarming hatchery of textile executives, Train went on to Yale where he made an enduring reputation for himself as an aggressive and skillful footballer. From Yale he went to Wall Street as stocks and bonds apprentice for a brief year. In 1937, he returned south to join Bibb's cotton department. Buying cotton did not keep him busy all the year round, so that Bibb's management found a variety of difficult but highly educational tasks for him.

One of the first was an intensive survey of the company's dyeing facilities with an eye to cutting their costs and making them more efficient. Recalling this assignment now, he says modestly—Train is an essentially modest and unpretentious man—that it was a wonderful chance to learn about yarn. In dyeing, yarn imperfections show up sharply as every millman knows. By following the imperfections revealed in imperfect dyeing back through the yarn preparatory departments, Train learned, he says now, a great deal about how good yarn is made.

Later he was sent to Bibb's huge mill in Columbus where he worked under Russell Newton who was then superintendent and who now bosses the Deering Milliken Research Trust. Train has a great admiration for Newton who, he says, taught him a lot. He remained at Columbus until 1941, functioning, as he describes it, as a "jack-of-all-trades" in mill management. When the United States went to war in 1941, he promptly broke off his budding textile career to enlist in the Navy. He put in four strenuous and exciting years commanding a subchaser in the Atlantic, an experience that has given him a permanent and strong love of deep water sailing.

How to Pay

When the war ended, Train came back to Macon to work at Bibb as assistant to Charles Hertwig who was then vice president and controller. By 1954, Train had moved up to executive vice president, becoming president in 1956, following Hertwig's retirement.

As president, Train says it is now his essential job to co-ordinate the management activities of a large group of able executives—many of them, he says with his characteristic modesty, more experienced and wiser in mill management than himself. Summing up Bibb's present status, he feels that the company has been built up to a good position for profitable survival in today's rough-and-tumble textile climate.

But he is far from satisfied. Bibb will go on searching for new markets, fighting all the way to keep modern and to make better, more diversified products at lower costs. The major problem of textile management today, Train says, is to find the money to buy the new equipment needed to keep a position among the best firms in the industry. He confesses that at times when he leans back in his chair for a moment and considers what it costs today to buy new machinery in a substantial way, "it makes my blood run cold."

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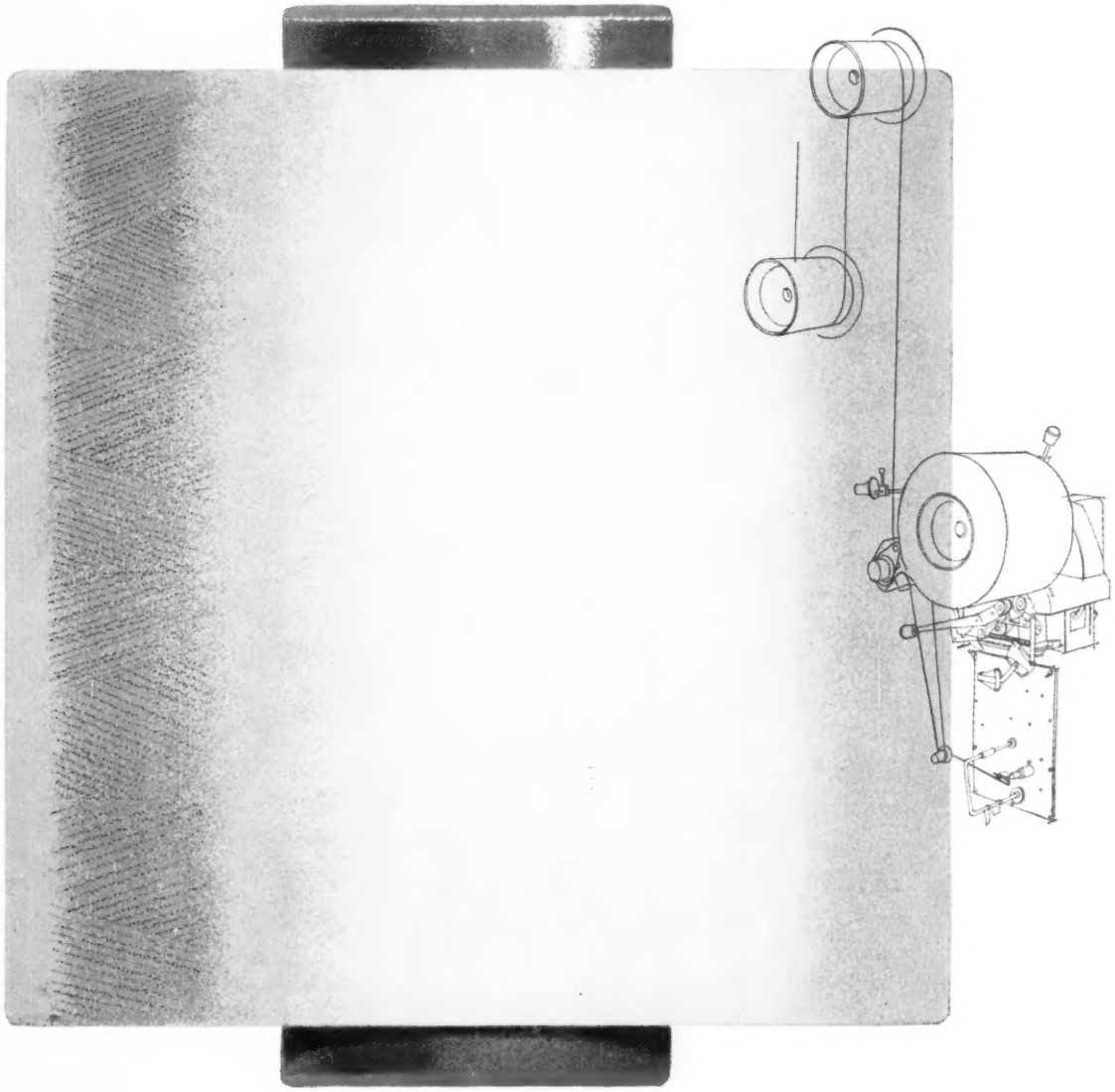

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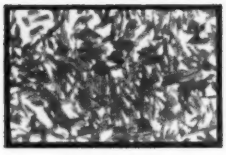

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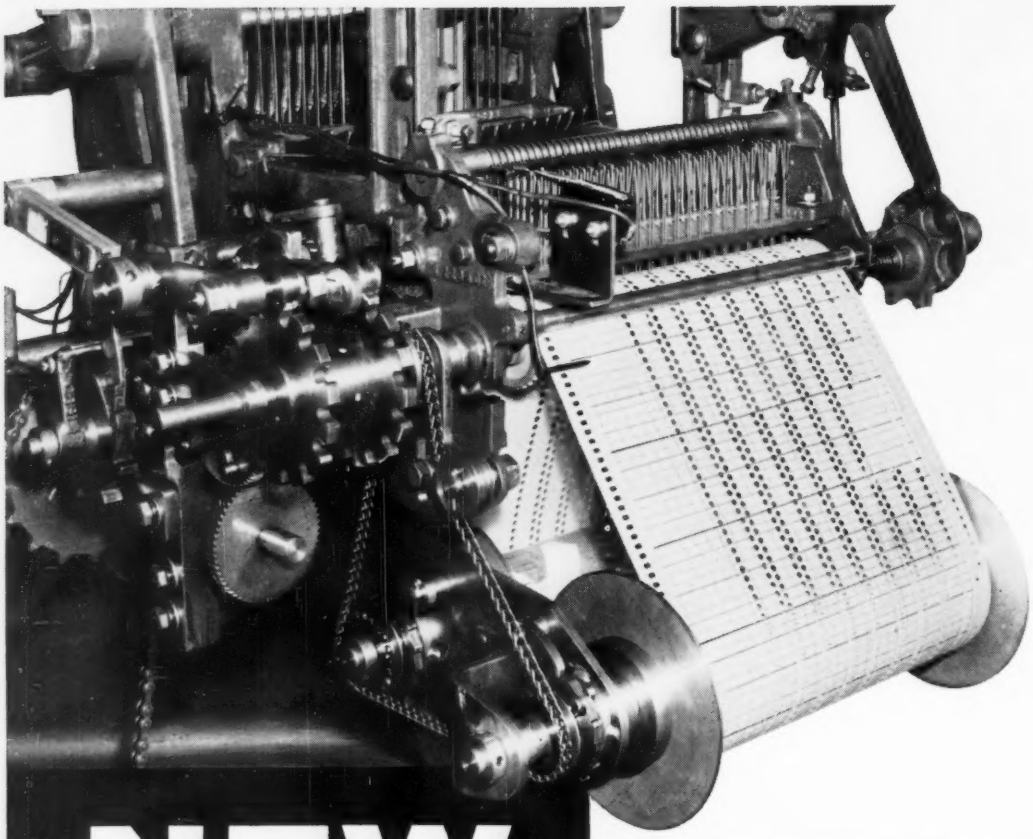

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Atlantic City Report

Textiles Sees its Future

LAST MAY in Atlantic City, textile millmen from all over the free world, and especially the United States, saw the shape of their industry's future. Measured in terms of increased productivity provided by faster, better, more automated machinery, that future will be bright indeed.

The occasion was the week-long American Textile Machinery Exhibition-International sponsored by U.S. textile machinery makers. All in all, an estimated 17,000 visitors studied carefully the machinery shown in 400 exhibits in the gigantic Convention Hall of the New Jersey resort city. As sampled by MTM's editors in roving floor interviews during the five days of the show, the general impression of visiting millmen was that in the future fewer, faster, more efficient machines will turn out far more yarn and fabric with less manpower required to tend them. Most of the key mill executives added that the plain lesson of the gigantic show for alert textile managements was: "Modernize fast and modernize thoroughly or be prepared to yield to those mills that do."

Summed up in a few words, the overwhelming impression of the show was one of increased running speeds for machinery, resulting in greater production. Spinning and roving machines, as well as other yarn preparatory equipment, was shown running at double and triple the speeds of the best machines demonstrated at the preceding ATMA show in 1954. Shuttleless looms also were shown operating at higher speeds than previously attainable with conventional shuttle looms. The newest winding equipment on display similarly demonstrated that higher speeds plus great automation was the keynote to the future in this important area of yarn processing.

MILL peoples' reactions to new machinery at Atlantic City, as told to MTM's editors, emphasized these trends:

- **Shuttleless looms will find acceptance, be widely used.**
- **There's a wide-open future for reliable automatic doffers.**
- **Pneumatic cleaning in weave rooms will gain rapidly.**
- **There will be greater use of improved needle looms and new machinery for forming nonwoven webs.**
- **Mills will stick generally to separate roving operation, relying on new high-speed, bigger-package machines.**
- **Automatic box loaders will compete strenuously with trend to loom winders.**

Other strong trends for textiles' future indicated by the exhibits are greater use of an increasing variety of electronic devices for improving yarn and fabric quality in the manufacturing process; increased use of pneumatic cleaning equipment, both of the blower and suction type in weave rooms; stepped-up production of nonwoven fabrics with a wider range of functions and improved esthetic properties.

(Continued on Page 30)

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WHAT'S NEW IN LOOMS?—Crompton & Knowles' display was consistently crowded during the Exhibit.

Atlantic City Report

(Continued from Page 27)

Yarn Manufacturing

Yarn preparatory operations, it was clearly revealed at the show, continue to be dominated by a parade of new machinery designed to yield larger package sizes and greater speeds. Draw frames, for example, have doubled delivery speed since the last exhibition in 1954. New ones running at this year's exhibition were all operating at close to 600 feet per minute on carded cotton; many observers believe that 700 feet per minute will soon become accepted as standard throughout progressive mills.

Whitin Machine Works showed its Even-Draft frame with four heads, running at 600 feet per minute, delivering into 18" x 42" cans. The frame has a built-in pneumatic waste removal system as well as anti-friction mounted four-over-five roll drafting system, anti-friction V-belt driven coiler gear and complete stop motion control.

Saco-Lowell Shops had its Versa-Matic draw frame in operation which features electronically controlled drafting, a system worked up in conjunction with the Uster Corp. Here again, speed is 600 feet per minute and can size is 18" x 42". When running combed stock, Saco-Lowell states only one drawing process is required on the Versa-Matic.

American Rieter Co. showed its D/O draw frame with speeds running all the way from 350 feet per minute up to 625 feet per minute; higher speeds are thought possible, according to reports.

Platt Bros. featured its Model MDF 5 draw frame with a speed of around 450 feet per minute, delivering into a 16" x 42" can. But spokesmen for Platt indicated that a new draw frame will be available soon with two heads instead of four which will run at the newly accepted speeds and will deliver into 18" x 42" cans as well as newer 20" x 42" cans. Platt states that reducing the deliveries from four to two will minimize loss of production when a frame is shut down for any reason.

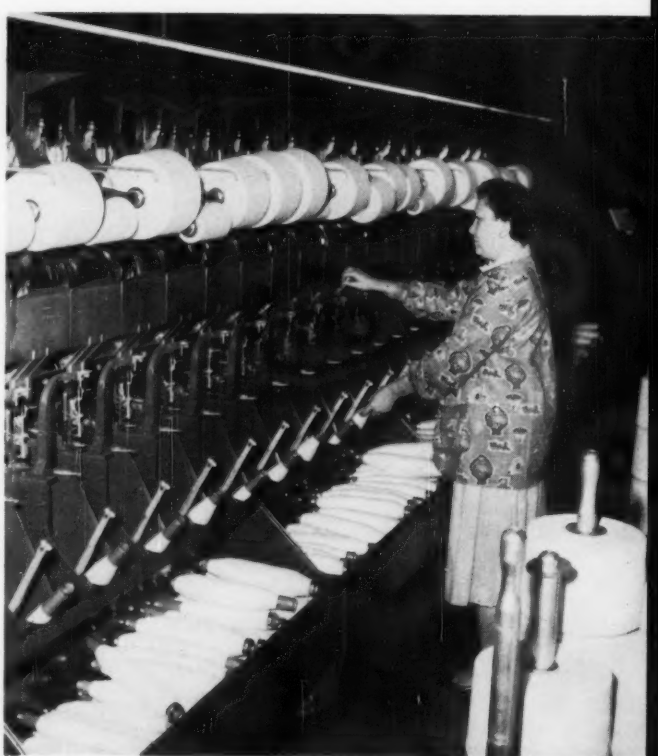
Societe Alsacienne de Constructions Mecaniques introduced its new Model ER draw frame. It is a two-headed version, reported to give greater efficiency. With a reduced number of heads, the machine can be fed from larger cans with fewer piecings. A patented drafting system gives effective speeds ranking with the highest.

O-M Spinning Machine Co. had its draw frame running and speeds of 600 feet per minute are said to be possible. This unit acts as a packaging machine for the OM-S spinning creel cans. A new system was demonstrated for automatic can doffing, allowing many cans to be handled without human attention. A new feature was a device called "Ever-Even" which is an automatic feedback control for continuously measuring and integrating sliver from each delivery. Evenness measurements, machine stops and their duration are recorded on charts. The device can also be used on pin-drafters.

The new Whitin Super J cotton comber created considerable attention with a production boost of 20%. Output is now up to 63 lbs. per hour, made possible by a new type of half lap with improved needle spacing to handle heavier laps. The new machine can use laps up to 1200 grains per yard.

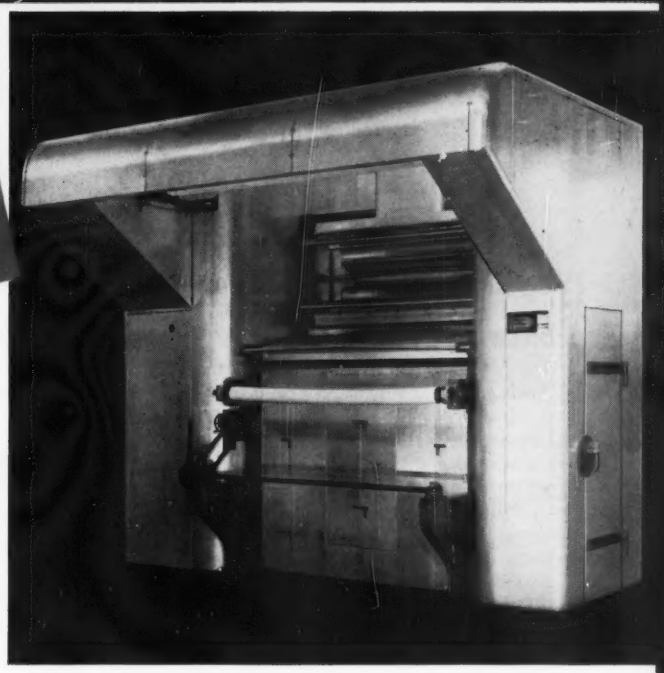
Something new in worsted combing was Whitin's comber for wool and worsted which makes use of the cotton system of movable nipper, a system which has worked out satisfactorily on the company's Super J cotton comber. By increasing the number of deliver-

(Continued on Page 40)



SPOOLER IN ACTION—Barber Colman demonstrated its highly automatic Type FF spooler.

*Needed NOW More Than Ever!



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Built to the well-known "NATIONAL" standards for construction, operation and control, these machines are demonstrating their profitable efficiency and economy in the 37 installations now in operation.

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BLEACHING
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Part 2

Follow these steps for

LEVEL WOOL DYEING

By C. H. A. Schmitt,
SANDOZ, INC.

Dissolving Dyestuffs

In spite of the best preparation of the cloth before dyeing, and the greatest care in selection of dyes and dyeing procedures, one can obtain bad results due to improper methods of dissolving the dyestuff.

Most dyes used for wool dyeing are considered water-soluble, but this varies from 5 grams per liter to 100. Therefore, the person doing the dissolving should have a table of solubility ratings to guide him, such as we have in our shade books. Pour enough warm water on the dye while stirring to wet out all the powder to produce a smooth mass about the consistency of light cream. Then add hot water gradually until you bring the level up to the maximum concentration known for the dye. If you do not have a solubility chart, then a good average minimum is three gallons of hot water per pound of dye.

Few dyes require actual boiling with a steam line. Many would be destroyed, and 160°F. is a limit for dissolving. The main thing is *to use enough water.*

Some dyes will stir in easily but others have such a dry particle surface that they tend to float. These will agglomerate and form lumps on the bottom of the dissolving tank. Some of these lumps tend to be gummy. For this reason we emphasize stirring thoroughly with a wooden paddle before adding more water and bringing up to 175°-180°F. Then stir until no more dry particles come to the surface.

When dyeing large batches of deep shades, one will sometimes need as much as 75 lbs. of dye per kettle. It is for such conditions that every dyehouse should have at least one 150-175 gallon dissolving tank with hot and cold water, a steam line, and most of all, a "lightning" mixer. Poor crocking is often due to improper dissolving of dyestuff. In all cases the finally-dissolved dye should be poured through two or three layers of cheese cloth spread over a fine screen. In a well-designed dyehouse, all dye is dissolved in tanks on the floor above and piped directly to the kettles.

Particles of undissolved dye or minute agglomerates and especially gummy ones will adhere to the cloth and then you are in trouble. Many times they will only partially dissolve, but because this is gradual, a spot develops, deep at the center and gradually spreads out to blend with the rest of the shade.

In the case of the neutral dyeing premetallized colors (2:1 metal complex dyes) the use of a steam pipe for raising the temperature of the water is not recommended. This also applies to Chrome Black T. 185° is sufficient for 2:1 metal complex dyes, while Black T is best dissolved at 170-175°F.

However, in the case of goods containing traces of lime or aluminum soap, or where the water is unusually hard, these specks of gummy or undissolved or semidissolved dye become set and never dissolve, leaving the cloth with a spattered appearance. Under such conditions we recommend that .05% of a sequestering agent be added to the water in the kettle before the dye is added. All of this brings out the importance of having clean soft water in the dyehouse as well as in the wet finishing plant.

Use of Sequestering Agents

In the case of dyeing ladies' or men's wear with acid dyes, it will be found helpful to use a ½ to 1% of a single strength sequestering agent in the dyebath for the following reasons.

Acid dyes, as a group, do not show the bad shade change from the presence of excess iron, but they do dye much duller if the iron content runs over two parts per million. In some plants this runs up to 10 and 12 at certain times of the year.

In the dyeing of bright shades, especially light ones, the iron content of the water can in itself produce a pale ecru shade. How, therefore, can you expect to dye a clear pink, aqua or baby blue? We highly recommend sequestering agents in all light-shade dyeing with either acid or chrome colors. We would also recommend its use in rinsing after scouring because there it will also aid in keeping iron salts from yellowing the wool.

One of the reasons dyers have reported that a certain light shade went dull on rinsing down was due to the gradual absorption of iron and other contaminants in the rinse water.

The effect of iron on shade and fastness properties of chrome dyes is one of the most troublesome factors in chrome dyeing because the iron content of the water and in the steam is ever changing. Nearly all chrome dyes are affected in shade by iron in various degrees. The most serious trouble comes when dyeing topchrome. However, when dyeing by the Metachrome method, this trouble is greatly diminished.

Dyes which show the best resistance to iron are to be preferred because any shade change is also reflected in poor fastness properties, especially in fulling, carbonizing and decatizing. Colors which are changed in shade by iron, form a combination of a chrome dye lake and an iron dye lake. The iron lake is a totally different shade and very fugitive and

(Continued on Page 34)

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Nopco 1525	A 100% active nonionic ethylene oxide condensate with excellent acid stability
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Nopcolube® 55	Lubricant added to polyacrylic acid size bath for Nylon to eliminate topwaxing

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Nopco FUA®	Self-scouring all fatty wool oil
Nopcostat 56-C	Antistatic oil recommended for use on all woolens. Applied in range of 3-5% owf
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Worsted Oil 12®	Outstanding antistatic worsted lubricant. Provides optimum fiber-to-metal frictional characteristics and interfiber cohesion

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Hyonic® PE	Series of polyoxyethylene condensates offering a range of oil and water solubility with numerous applications in the textile industry
Syntergent® 28-B	Nonionic raw wool scouring detergent
Syntergent 130-W	Low-temperature raw wool scouring detergent
Nopco 1479-D	Designed for the fulling and scouring of wool and worsted fabrics. High soda ash stability
Nopco 1658-C	An inexpensive detergent designed to replace soap for fulling and scouring on a pound-for-pound basis
Nopco 9092	Fulling compound with exceptional detergency. Will tolerate soda ash solutions as high as 14 ounces per gallon

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Nopcotex	Trademark for Nopco's line of softeners. Products available for all phases of fabric finishing
Polymul® Series	Series of polyethylene emulsions used as pure finishes and softeners in resin formulations
Nopco 1425-B	Dye leveling and stripping agent recommended for acid, premetalized and chrome dyestuffs
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Level Wool Dyeing

(Continued from Page 32)

will be removed in various wet finishing treatments, leaving the chrome lake intact. You can appreciate the problems involved in matching shades under such conditions when you do not know the iron factor. Today we have special sequestering agents which can reduce this trouble. But we suggest a thorough investigation as to the correct type and amounts for your particular problem.

The dyer cannot put the dye on heavier or lighter in spots, or streaks, unless he disregards all rules of application. What does happen is that the individual fibers, either in spots or streaks, have been so violently altered prior to dyeing that they have a different rate of dye pick-up from the other areas of the cloth. Again we say, be sure of the cloth before it goes to the dyehouse.

Pre-Dyeing Processes and Choice of Dyestuffs

Assuming that the dyehouse receives properly processed cloth, what are the prospects of level dyeing on a complete line of shades for ladies' wear, either plain or washable type if a plant objects to neutralizing after carbonizing?

Using Vitrolan types, (Acid Premetallized) one should have no trouble in making a great many shades, because they require 6—10% sulfuric acid for proper dyeing. However, these dyes are limited in three ways:

1. It is impossible to make bright scarlets, reds, greens, blues and violets.
2. Fastness to light is not the best in light shades where blue is the predominate component.
3. Wearing qualities of fabrics dyed with these colors are generally lower and not recommended for high quality gabardines or other fabrics used for men's wear as well as ladies' wear. This weakness is greatly increased if the goods have to be stripped and redyed.

This brings us to the major problem: how should we dye the bright shades that cannot be made with Vitrolans? The majority of dyes required to produce the bright scarlets, reds, blues, greens and violets are divided in three classes.

Class I

Dyes which dye level with a normal amount of sulfuric acid, but only when the goods are neutralized after carbonizing and perfectly level as far as residual soap, alkali, or if a trace acid, level in distribution of acid content. This class of dyes is divided into two groups—those like Alizarine Light Blue B, Azo Rhodine 2G and Xylene Light Yellow 2G, which have a high levelling or migration factor, and, if they are absorbed unevenly due to pre-processing, will in normal or slightly extended boiling time level out satisfactorily. The other group do not level or migrate as well; but because of their slow, steady rate of exhaustion, dye so level, there is no need for migration. Typical dyes are Alizarine Light Blue 4GL, Xylene Fast Rubine 3GP.

Class II

A second class of dyes suitable for bright shades are those known as the Xylene Fast "P" Colors, a group which dye best at a pH of 5.5-6.0 and at this pH have equally good dyeing properties as those in Class I, provided the fabric is in a similar suitable condition as mentioned for Class I.

Class III

This third class of dyes includes the Lanasyn, Lanasyn Brilliant, or Brilliant Alizarine Milling Groups, and are used on piece goods when a particular shade or maximum fastness is desired to washing, and perspiration. This group is generally required on fabrics which are to be subsequently chlorinated for shrink proofing. Chlorination reduces the fastness to washing, light and perspiration of many dyes. It therefore becomes necessary to use those which are well above minimum requirements to allow for some lowering of fastness.

It is this group of dyes which offer the greatest difficulty unless the fabric is in a maximum condition of pre-dye levelness. Satisfactory results are being obtained by special care and dyeing at a pH of 6.5-7.5. By using retarding agents like our Lyogen SF or SMK, it is also possible to dye these colors at lower pH, or directly after carbonizing.

Effect of Heat on Shade

There are two more important operations which cause shadiness in pieces which are not due to either pre-dyeing treatments or to dyeing itself. We refer to proper extraction after dyeing before drying, and drying itself.

Dyestuffs vary in their resistance to high temperature. Many dyes change shade with heat but return to shade on cooling. However, some dyes change shade permanently. You can appreciate the problem a dyer has to match off a shade when, because of shade and fastness requirements, he is forced to use one or more heat-sensitive dyes in a combination.

Let us consider the effect of uneven drying on shade change—a problem which many times a dyer can overcome by changing his dye formula, but which should be brought to the attention of the finisher and the boss mechanic. This concerns shadiness as developed in the dryer.

The best way to explain this is to describe the problem as I found it in a large mill. A light pink showed a gradual yellowing from the center towards the right selvedge. On checking other goods being examined that day, we found that only pieces dyed with a certain red component were coming through with this yellow cast on one side. Having experience before with uneven temperature in dryers, we checked and found a variation of 25°F. from left to right in the dryer.

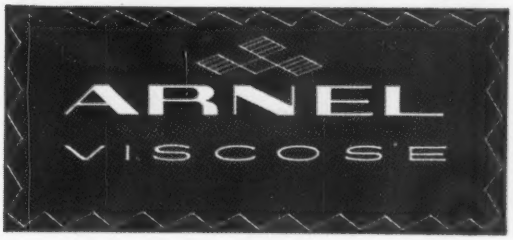
Because of occasional break-downs or the slowdown of individual fans or blowers in one section, temperatures can vary enough to cause color change by a variation in the per cent of moisture left in the cloth. By changing the red dyestuff to one which was more stable, the dyer eliminated any further chance for trouble if the dryers went out of control.

Many dyes show no temporary or permanent shade change up to a given temperature, say 190°F., but at 210 or 220°F., there is a break-down of the dye itself. In viscose and other synthetics where garments are pleated, we have a serious problem; many dyes are completely destroyed at the high pleating temperature.

In another plant, the dryers were supposed to operate at 225°F. for a particular type of goods. Here again, they ran into trouble with one side of their light pinks, blues and greens coming out very yellow. On checking the dryers, we found the temperature on one side varied from 220 up to 240°F. This was not

(Continued on Page 66)

MIRACLE SIZE FOR MIRACLE BLENDS



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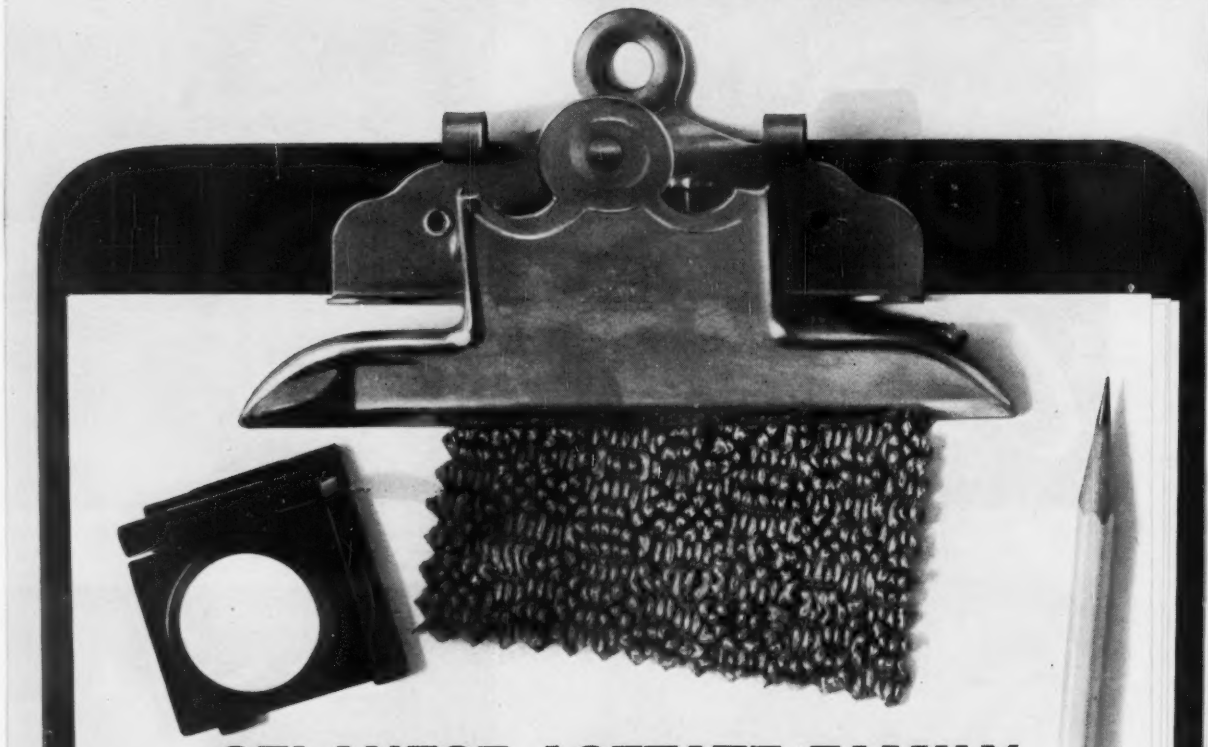

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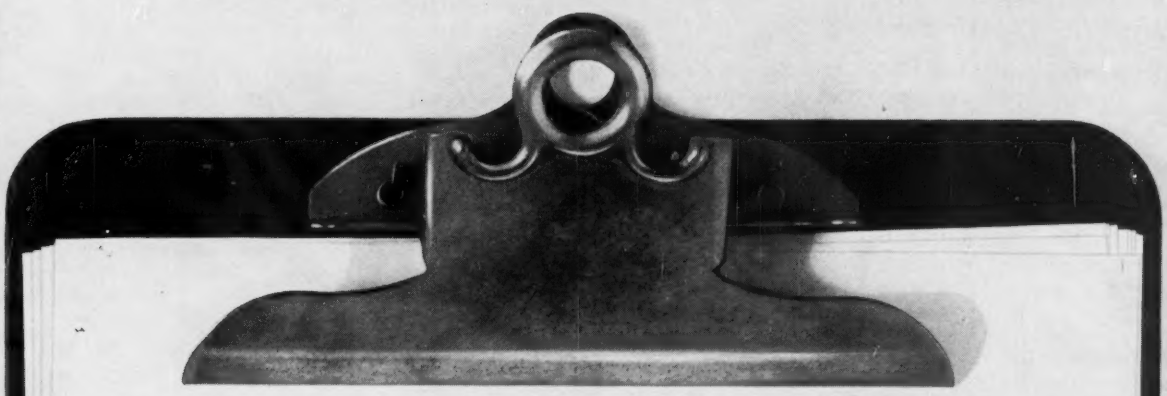

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Celaloft yarns are now available in dull and bright, and in Celaperm solution-dyed acetate colors as well. To take advantage of the potentialities of Celaloft, let Celanese work with you to develop new fabric constructions. Celanese Fibers Company, a division of Celanese Corporation of America, Box 1414, Charlotte 1, N. C.

Celanese® Celaire® Celaloft® Celaperm® Type F T.M.

Acetate...a Celanese contemporary fiber

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EXPORT SALES: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Ave., New York 16.

IN CANADA: Chemcell Fibers Limited, 1600 Dorchester Street West, Montreal, Quebec.

Wider Lycra Uses Foreseen

A broad range of end uses for Lycra spandex fiber is foreseen by its manufacturer, the Du Pont Co., in addition to those described when the new elastomeric material for textiles was announced late last year. Lycra is a polyurethane that stretches and snaps back into place like rubber. It is said by Du Pont to be stronger and more durable than conventional elastic thread, to weigh a third less, and give longer wear along with two to three times more restraining power. (For a detailed report on Lycra's properties see MTM Dec. '59, p. 38.)

Although full-scale commercial production of the yarn has not yet begun, foundation garments of it are already being turned out by 20 manufacturers. Soft, light and sheer, they provide figure control formerly possible only with heavy, bulky garments. Some of them actually weigh less than four ounces.

Additional advantages of girdles and brassieres of "Lycra" are high resistance to perspiration and cosmetic oils and lotions and the fact that, with proper temperature controls, they can be safely machine-washed and tumble-dried. Bathing suits containing Lycra are also available. Surgical stockings of the new fiber are expected to be on the market by fall, 1960.

Among the possible end uses for Lycra, when yarn production can be increased substantially, are the following: suspenders; slip tops; lingerie straps for slips and bras; form fitting hosiery afterwelts; surgical bandages and tapes; medical supports; panties; leg bands; wristlets and jacket trim; dresswear; rainwear; skirts; sweaters; suits; coats; braids; hairnets; hats; slacks; pajamas; skin diving suits; leotards; athletic uniforms; polo shirts; ski clothing; golf jackets; golf balls; golf club mittens; gloves; sling shots; watch straps; narrow tapes and webbings; sewing thread; chin straps. Shoe gores; shoe fabrics; slip covers; mattress covers; ticking and quilting fabric; card table covers; industrial belting; antigravity suits; wall covering; face masks; felts; book covers and jackets; protective coverings; flannels; miscellaneous military; carpets and rugs; furniture upholstery; automobile upholstery; fitted sheets and bedding; laundry bags; shock cord core; wire and cable jackets; crash barriers; toupee bases; woven and nonwoven fabrics; papers; coatings; swimming pool covers; protective clothing.

Edwards Heads Saco-Lowell

David F. Edwards has returned to participation in the management of Saco-Lowell Shops as chairman of its board of directors. He joined Saco-Lowell as president in 1926 and served in that capacity until his retirement in 1952. After that time he served as director and honorary chairman of the board. The resignation of Thomas J. Ault as president and director, effective July 1, was given as the reason for Edwards' return.

Royden Walters, executive vice president of Saco-Lowell, has been named general manager.

David F. Edwards

Royden Walters

Industrial Rayon Outlook Bright

Operations of Industrial Rayon Corp. may be restored to a profitable level during the 1960 fourth quarter, Frederick L. Bissinger, president, told shareholders at the recent annual meeting. A loss is expected in the second quarter, reflecting the curtailment at the Cleveland plant and the startup costs involved in the production of the company's new bulked nylon filament yarn and polypropylene staple and filament yarns. Third quarter results, he said, should approach the break-even point.

Bissinger disclosed that the company is planning to more than double its capacity for Nyloft, its bulked nylon filament yarn used in the manufacture of carpets. Industrial Rayon began production of Nyloft near the end of last year and carpets made with it were introduced at the January Home Furnishings Show.

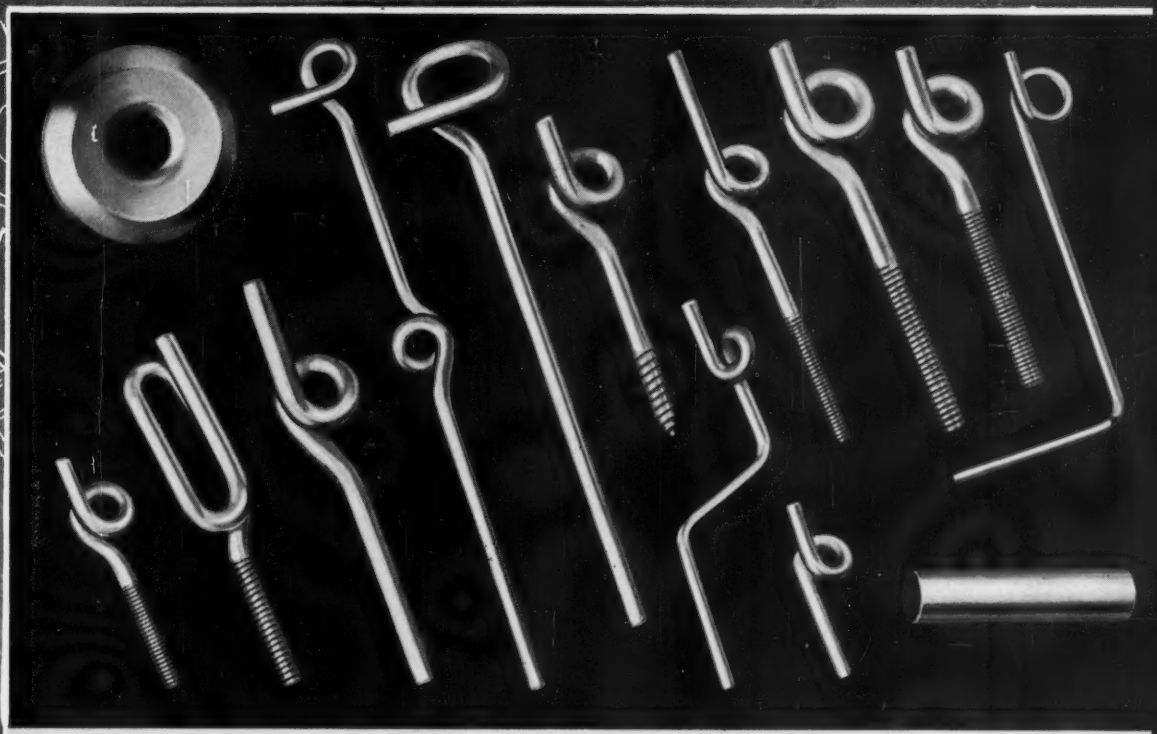
Bissinger reported that the company's new polypropylene fibers which are presently being manufactured in limited commercial quantities also are experiencing a "good market demand." He also revealed that the company's large Painesville, Ohio plant, which he described as one of the most efficient in the industry, instituted a manufacturing process improved this month which will further reduce the cost of producing Tyrex tire cord. He added that this development, coupled with an anticipated higher level of production, will substantially benefit the company's operating results.

"There has been considerable recent diversification of our knitted cloth products," Bissinger said. "Our Eiderlon cotton and rayon fabric is finding increased usage in women's and children's undergarments, and our new Covinair fabric will be introduced in new lines of sport shirts."

Bissinger stated that increased emphasis is being given to overseas ventures and that active negotiations are underway to build fiber plants for companies in several foreign countries. He said that these negotiations might, in some instances, involve equity participation. He said that Industrial Rayon early this year organized IRCO A. G., a Swiss corporation, to which it made available certain technical data relating to rayon and Tyrex tire yarn, cord and fabric and which IRCO has the right to exploit in prescribed countries.

At the meeting, shareholders elected management nominees to the company's board of directors by an overwhelming vote despite a proxy solicitation by an opposing group which sought to elect five directors. A total of 1,153,740 shares or 86.6% of the shares represented at the meeting were voted in favor of the management nominees. The opposition received 173,359 votes.

MACHINERY and EQUIPMENT SECTION



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SATIN FINISH *Chromium Plated Guides*

FOR ORLON, DACRON, ARNEL AND OTHER SYNTHETIC YARNS

Mitchell-Bissell originated the Satin Finish for porcelain thread guides and pioneered its application to chromium plated guides on the principle that by breaking the contact between yarn and guide, tension and consequent thread wear are reduced. This broken contact is achieved by providing a fine granular surface for the guide. Because of the special preparation of the wire, this "hill-and-valley" contact surface of our Satin Finish Chromium Plated Guides is permanent and the hard, dense finish itself remains dull and satiny almost indefinitely.

Be sure to get the original . . . Mitchell-Bissell Satin Finish Chromium Plated Guides . . . for proven quality and the ultimate in service. Can be made in any diameter of wire, and in any desired shape. Also available in Mirror Finish.

Write for New Wire Guide Catalog.

EST. 1882

MITCHELL-BISSELL CO.

TRENTON, NEW JERSEY

Southern Representative: HOLT ASSOCIATES, INC., *Greensboro, N. C.*

Atlantic City Report

(Continued from Page 30)

ies, output has been boosted to 80 lbs. per hour, for an increase of 400%. This new unit will also work well with long staple synthetics, it was stated. The more conventional worsted combs such as SACM's PERL comb all drew praise in that they now offer increased production with improved quality.

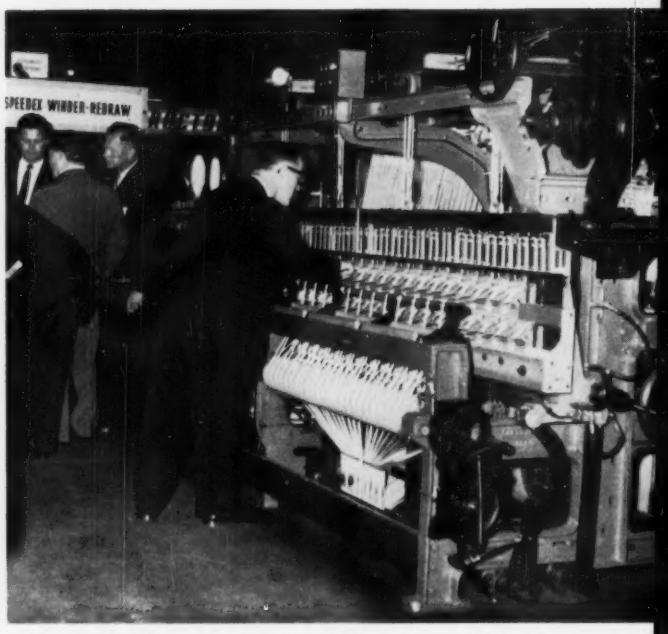
In the field of gilling and pin-drafting, the movement to equip all machines with devices for levelling the sliver and producing a more even product has accelerated. This was particularly evident at Atlantic City.

For example, a major advantage of three new units shown by **Roberts Co.** for processing worsteds and long staple synthetics was the control of the delivered output sliver-weight to within plus or minus one per cent. These models, the result of a new agreement between Roberts and Tematex of Milan, Italy, include the ParaDrafter, the AutoEvener and the ParaBlender. Roberts is adapting the Italian versions to American production requirements. (For a more detailed description of these new machines, see this magazine, May '60 p. 35.)

Warner & Swasey, with its improved pin-drafter intersecting draw frame, uses an in-feed levelling device to get a more consistently uniform product. **La Duranitre** of Belgium showed a new type of gilling machine featuring open gilling as opposed to the intersecting type. Again, the machine has a hydraulic system of autoleveler. An interesting feature of this machine was its operation in conjunction with a new spinning frame made by **Carniti** for handling sliver-to-yarn. The new system needs at most two or three gillings, then moves directly to the spinning frame which features two drafting systems, one for handling the roving and the other a regular spinning draft.

Holdsworth Mfg. Co. had an auto-leveller device on its latest design high speed super gill. This equipment automatically reduces any irregularities of feed and weight and provides for delivery of a constant level sliver at high production.

For cotton mills, the new developments in roving frames are just as dramatic as the advances in drawing. A lot of engineering has been put into roving frames in recent years to the point where bobbin sizes are now standard at 14″ x 7″ and spindle speeds



CLOSE STUDY—Narrow fabric looms, such as this one exhibited by Fletcher Works, drew a large share of visitors' attention.

have jumped to 1200 r.p.m. A frame which breaks with tradition was unveiled by **Saco-Lowell.** Called the Rovematic, the new frame offers an entirely new concept in spindle and flyer arrangement. It has gear driven spindles and the flyers are fastened at top and bottom. They do not have to be removed for doffing. The frame has eliminated heavy traversing carriages, carriage lifter mechanisms, counter balance weights and horse-head drive. Spindle speed is 1200 r.p.m. (For a detailed report on this new machine see this magazine, June '60 p. 40.)

Along more conventional lines, but keeping pace with the higher 1200 r.p.m. spindle speeds and 14″ x 7″ packages, was the new Whitin Model P roving frame. This machine can put between 88 to 100 ozs. on the larger-size bobbins. **Platt** showed a roving frame with similar speeds and package. The frame at the exhibition was putting 6-¼ lbs. of roving on each bobbin. **American Rieter** also had a roving frame operating with the larger-size packages.

Developments in spinning showed few major changes since the Milan show in September, 1959. The trend to narrower frames was evident, even in the wool spinning field. Most cotton frames are now standard at widths from 25″ to 28″. The movement toward a universal drafting system to handle all fibers continues. This is more evident in frames for spinning worsteds and long staple synthetics.

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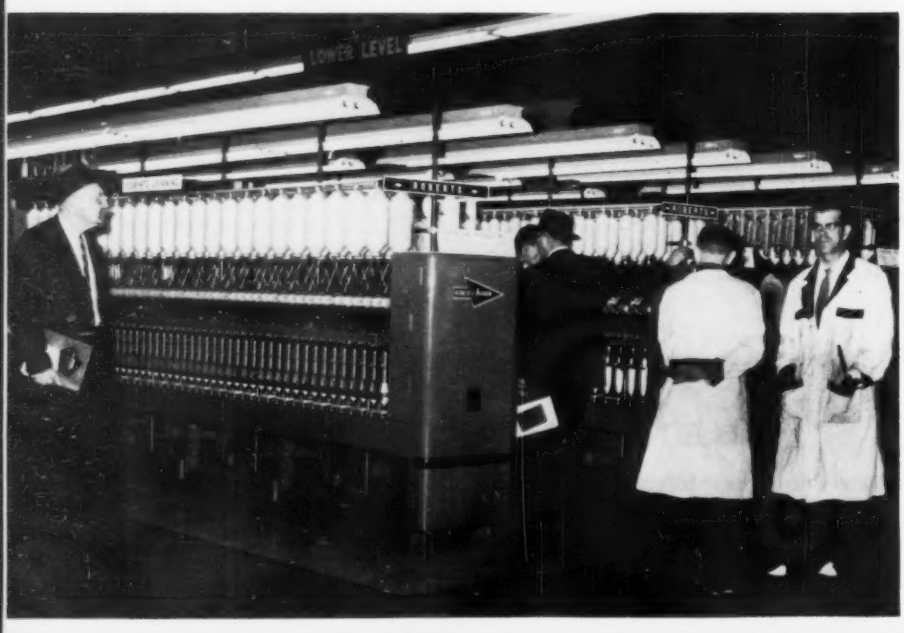
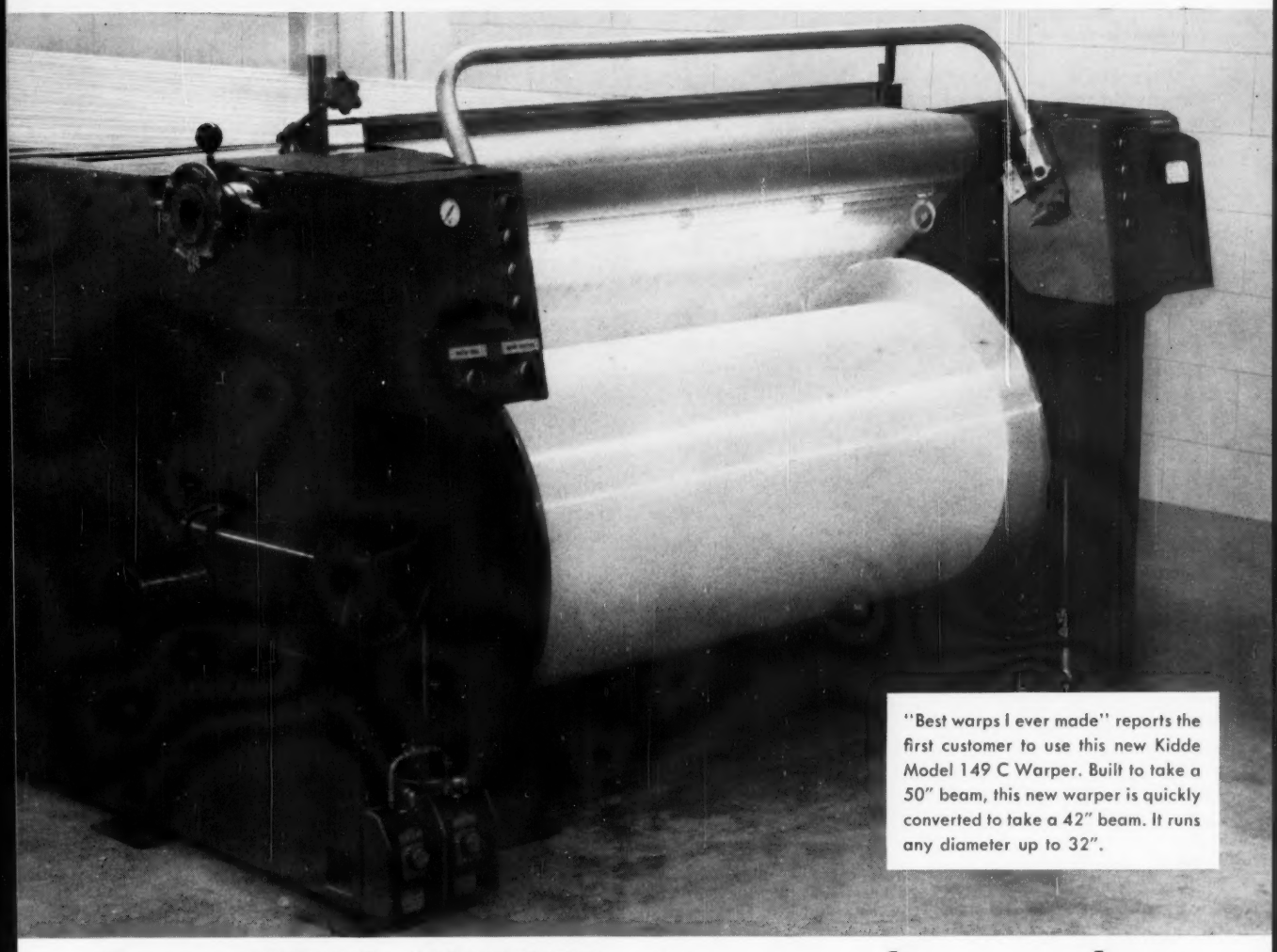


UPDATED SPINNING—As an essential part of textile manufacturing, displays of spinning equipment were prominent.



"Best warps I ever made" reports the first customer to use this new Kidde Model 149 C Warper. Built to take a 50" beam, this new warper is quickly converted to take a 42" beam. It runs any diameter up to 32".

Every KIDDE WARPER gives you the smoothest, most even warp beams in the business

Kidde warpers are *engineered* to give you smoothness and evenness in yarn buildup that's unmatched by any other machines you can buy. Here are a couple of reasons why:

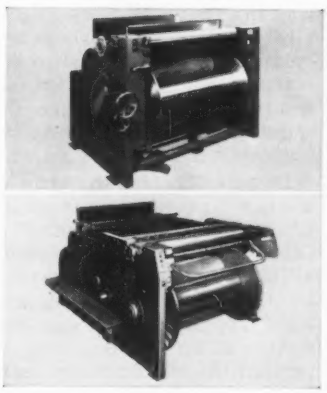
Instead of just one cylinder on the compression roller, Kidde gives you *two* – hydraulically operated – one on either end of the roller, for perfectly balanced pressure that eliminates bounce and chatter. And powerful brakes stop the beam within one revolution and automatically adjust themselves. What's more, the brakes on the measuring roll, compression roller and beam are electronically synchronized so yarn is never scuffed.

When used with a Kidde accumulator, both warper and accumulator are electrically synchronized. This maintains even tension when yarn must be backed off to pick up a lost end.

These are only a few major advantages of Kidde warpers. Get the full story of their trouble-free operation by contacting:

This Kidde warper handles beams up to 21" in diameter, made in three sizes: 21, 42 or 50 inches long. Every part is easily accessible. Regardless of size, any Kidde warper can be doffed automatically – even by a girl. Hydraulics do the work, at the touch of a lever.

Kidde high speed cotton system warper handles 54" section beams with flange diameters up to 36". Has all the quality features of other Kidde warpers with speeds up to 1,000 YPM.



TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

TEXTILE MACHINERY CORPORATION – BLOOMFIELD, NEW JERSEY

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

(Continued from Page 40)

MagneDraft, introduced by **Saco-Lowell** at the last Greenville show and on display at Milan, continues to draw attention. Using forces of magnetic attraction to produce required roll pressures, the system eliminates antifriction top and bottom rolls and all conventional weighting apparatus. A new front top roll support shown at Atlantic City allows quick "end-around" piecing. There is no need for lubrication in the drafting zone.

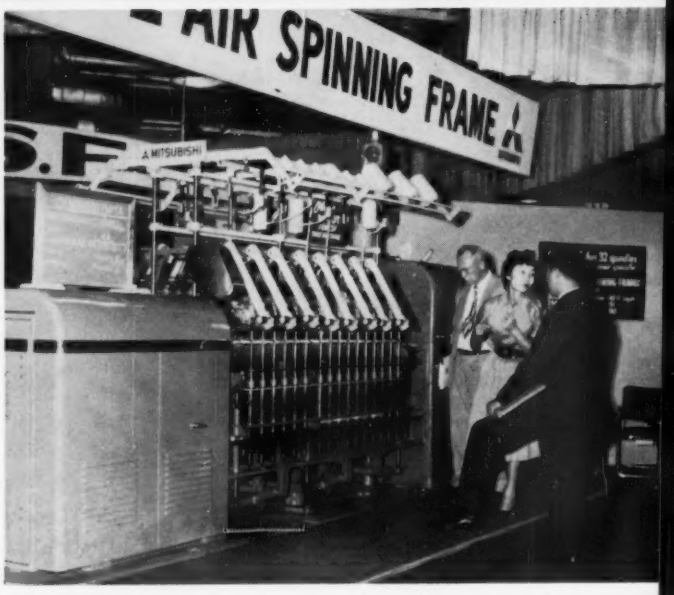
Whitin's Piedmont spinning frame, introduced at Greenville in 1958, was on display, as well as the company's newer Model KW long draft two apron system for spinning worsted, synthetics or blends having staple lengths from 1-½" up to 8-¾". **Roberts'**, along with its Arrow M-1 cotton system spinning frame, showed its Arrow long fiber worsted system spinning machine. It was apparent at the show that the trend to narrow frames has extended overseas. **Platt** came up with its answer in its Model MR 4 all-count, general purpose ring frame in narrow width.

Drawing considerable attention because of its novel system of yarn collection was a Japanese air frame with pot spinning made by **Mitsubishi International.** For spinning worsted yarns, the frame produces a lofty, soft yarn because of the absence of ring and traveler. Also there are fewer broken ends, according to the manufacturer. Air is used to guide the yarn from the drafting zone. It is then collected by centrifugal force in a pot which rotates at about 18,000 r.p.m. The yarn is wound on a paper tube inside the pot. About 2.65 ounces can be put on each bobbin of 48's worsted count. Wool sliver can be drafted anywhere from 60 to 100; synthetic yarns from 100 to 150. A 304 spindle frame can be doffed in about 10 minutes.

Automatic Doffing Draws Crowds

At Atlantic City, the sole automatic spinning frame doffing machine on display shared with two shuttleless looms the honors of attracting the densest crowds of absorbed watchers. The automatic doffer, operating only on a demonstration or "sample" frame of a few spindles is the product of **O-M Spinning Machine Co.**, represented in the U.S. by **E. S. Rudnick.** It is called the Kanegafuchi Auto-Doffer. The fact that it was the center of fascinated attention during virtually every hour the show was open reinforced the opinion of many veteran textile machinery and mill management men that automatic doffing is the new frontier in mill improvement. These observers expect rapid progress in this area in the next decade. No automatic doffers were shown at Milan last year.

Despite the fact that two other automatic doffers are now in the testing stage in this country—a Spanish machine, the "Treufus", offered by Willcox & Gibbs, and a machine recently developed by Deering Milliken Research Corp.—the only exhibit at Atlantic City was the Japanese version. Although the Kanegafuchi machine was operating on only a short section of an OM-S spinning frame, it appeared to perform in commendable fashion. The economies of a full-scale installation have yet to be established, but to millmen at the exhibition, the idea made sense. The Auto-Doffer can be made with dual doffing heads. Travelling along both sides of a full length spinning frame, it is said to be able to complete a doff in two minutes.



MADE IN JAPAN—Foreign equipment, such as this pot type air spinning frame demonstrated by Mitsubishi, made up a large part of the Exhibition.

Davis & Furber Machine Co. came up with five completely redesigned machines for the wool and synthetic fiber field. Most attention was centered on its new Model H wool frame where floor space has been cut as much as 15% per spindle by reducing the width of the frame. Also the height has been cut, but a full 15-inch traverse remains. Paper tubes are used and package size has been boosted by as much as 45%.

Other redesigned machines included a synthetic sliver card for making sliver for high-pile knitting machines, an improved Model L 84-inch wool card, a fiber blending opener and a new Selectrite napper, a feature of which is the use of structural aluminum.

Whitin had its "Flex-Spin" wool spinning frame running with new added features which combine to give maximum production, package size and performance.

Dramatic increases in winding speeds, greater flexibility and larger packages were noted in winding machines. The new Uniconer introduced for the first time by **Leesona Corp.**, made a big impression. The unit can wind cotton and other spun yarns from spinning bobbins to cones at speeds of 1200 yards a minute. There is no need for machine patrolling or the rehandling of partial supply bobbins. There is an automatic knotting device at each spindle with a 10-second knotting cycle. Maximum package size is 14-inch bottom diameter, weighing up to 12 lbs. There is a self-contained vacuum and cleaning system. Besides the regular packages for knitting, dye tubes, etc., there was favorable speculation on a bright future for jumbo-size warping packages; indeed some warper creel manufacturers were reported to be designing special creels to take advantage of the bigger size package.

Another winder attracting lots of attention was the new Model F spooler of **Barber-Colman.** This machine will wind cheeses or cones from bobbins up to 14-½" long at speeds up to 1200 yards per minute. Package weight is about 6½ lbs. and the new spooler has a built-in suction cleaning system. The machine can be arranged to handle several different counts and sizes simultaneously on different sections of the spooler.

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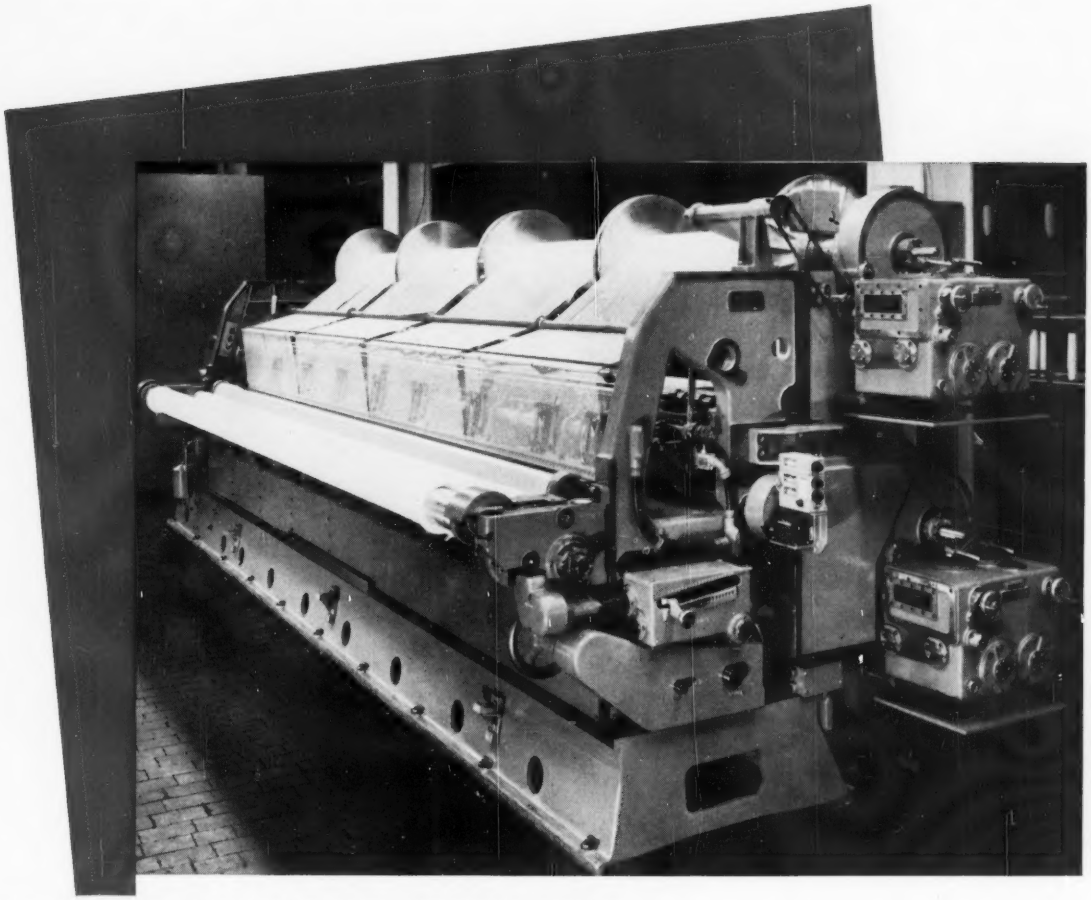


WHY THE "READING" TRICOT MACHINE

INVITES COMPARISON

It isn't just the speed of the Reading Tricot Machine — it's the quality and appearance of the fabric, the accurate runner length control, uniform fabric weight, uniform cost per pound.

Superior performance, proved in nearly four years of mill operation, is the result of these outstanding design features:

- Tension motion let-off control
- Positive signal roll
- Simplified guide-bar arrangement
- Selector-type gear take-up
- Thermal stability of insides
- Controlled automatic lubrication
- Simplified beam loading

. . . all supported by sound, sturdy, and precise manufacturing techniques. Compare the performance, and fabric quality of the Reading Tricot Machine with any of your present machines — new or old, fast or slow. Call us today. Textile Machine Works, Reading, Penna.

TEXTILE MACHINE WORKS

Where engineering makes the difference

(Continued from Page 42)

Foster Machine Co. showed its new Model 506 cone winder which can handle traverses from 6, 7, 8, 10 and 12 inches in length. The longer traverse makes it particularly suitable for large package sizes in the carpet trade, for example. An electronic device allows the tension for the entire machine to be adjusted at only one position. The yarn is automatically cut off when the package comes up to the required size.

Drawing attention was the "Rocket" winder shown by **Interstate Textile Equipment Co.** which produces a coreless package in lengths up to 30" and weighing as much as 9 lbs. A new type of cone winder, shown at Milan, but on display in this country for the first time, was exhibited by **Robert Reiner.** It has an operating speed of anywhere between 2000 and 4000 r.p.m.

The entire field of filling winding took on particular importance at Atlantic City in view of the startling changes taking place in this area. The wide acceptance of **Leesona's** Unifil, a broadening of shuttleless loom installations and the development of automatic box-loading devices have all combined to focus a sharp spotlight on every aspect of filling winding.

Unifil, the revolutionary unit for winding filling directly on the loom, has gone like wildfire in many mills since the device was first introduced at Atlantic City in 1950, and later refined and improved. The unit again attracted a crowd this year where it was running on Draper, Ruti, Picanol and Saurer looms.

Automatic box-loading devices, shown by **Draper** at the last Greenville Show and offered further by other manufacturers at Milan, were much in evidence at Atlantic City. Perhaps the strongest proponent of this system whereby special filling bobbins are wound at high speed with a "tip-bunch" to make them work in the Draper box-loader, was **Schlafhorst** with its Autocopser running in the **Terrell** booth.

Other winding machine manufacturers making this type of filling bobbin were **Abbott Machine,** with its fully automatic radial quiller, and **Schweiter** and **Scharer.** In the case of Schweiter, another system was also being demonstrated whereby "tip-bunch" filling bobbins were being deposited in a plastic box for use on the Ruti version of automatic box-loading devices.

A new doubling machine, particularly suitable for fiber glass yarn was shown by **U.S. Textile Machine Co.** It is extremely fast, winding at 9,000 r.p.m., and a special feature is an S-wrap roll, making it suitable for twisting. **Saco-Lowell,** through a new sales agreement, showed the Allma twister made by **Allgauer** of Germany. **Whitin** showed its Pacemaker ring twister for processing cotton, worsted, Dacron, glass and other fibers. Also on display was the Commodore ring twister for coarse yarn twisting in the tufted rug, tire, paper and other heavy cord industries.

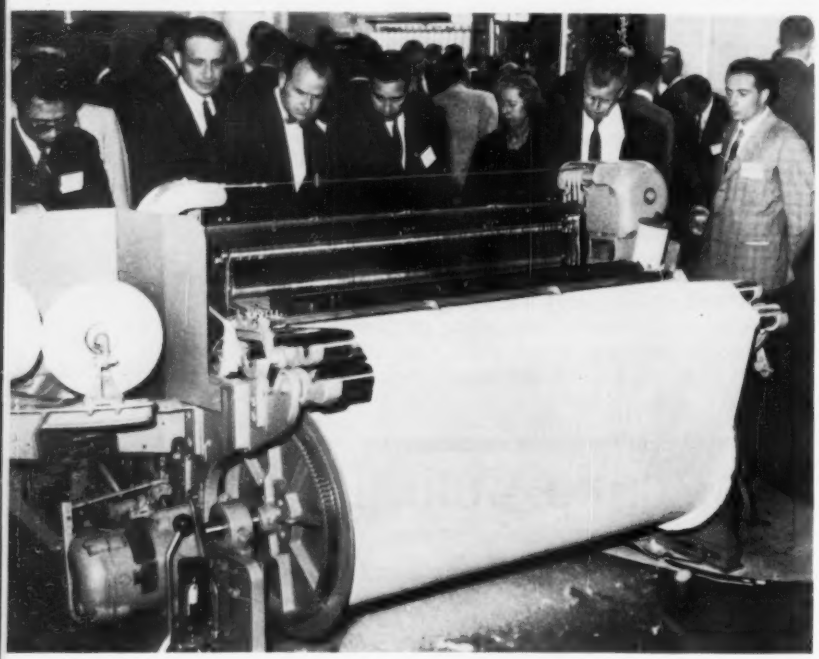
On public display for the first time was **Deering Milliken Research Corp.'s** textured yarn machine, developed a few years ago to make Agilon yarn. A feature of the Atlantic City demonstration was a new attachment to make thick-and-thin textured yarn which gives a linen-like effect.

The rapid rise of the nonwovens was evident at Atlantic City. No nonwoven machinery was on display at the last Exhibition in 1954. And so the big expansion in this field in these few short years was all the more striking. Three firms showed nonwoven machinery this time.

Curlator exhibited an improved feeder and webber to handle fine denier and high quality synthetic fibers as well as others. The machine can make a web from 1/16" thick up to 4" thick in widths ranging from 40" up to 84". A new device shown was a trimmer which trims one or both edges of the web and returns the trimming to the feeder.

James Hunter showed a web former and a needle-punch machine as its latest contributions to the field of nonwoven machinery. Following a blending system, the fibers go to a belt blender in sandwich form. A metallic wire card feed regulates the amount of stock which is next transported on aprons to compression rolls. The web former can be used to improve multi-directional strength. All weights can be handled, from a light gauze to webs 4" thick. The web former operates on the air doffer system.

The web can go to a saturator or directly to Hunters Fiber-Locker needle felting machines. There are two models, one to handle widths from 90" to 160" and another for widths of 45" and 65". In addition to handling nonwovens, the needle puncher can make fabrics for rug cushions, surgical dressings, vibration pads, and a wide range of additional products.



CROWD STOPPER—Shutteless looms, such as this machine made by Draper, probably won more attention at Atlantic City than any other kind of equipment.

Proctor & Schwartz showed a web machine to handle synthetic and natural fibers up to 6" long. Called Proctor-Form, the machine can make webs at a rate of 1200 lbs. an hour in widths of from 60" to 96". This web former has variable speed drives on main cylinder, lickerin, feed rolls, condensing cylinder and air system. Also for nonwovens were the Proctor controlling weight belt and the Proctor fiber blending feed.

(Continued on Page 46)

but I·R·C Continuous Process Rayon Yarn has no end...of beautiful, versatile, profitable uses...Nobody else continuously spins a yarn as perfect as this.

Industrial Rayon Corp., 500 Fifth Avenue, New York 36, New York

(Continued from Page 44)

New Loom Trends

THE DISPLAYS OF LOOMS, those key machines in fabric manufacturing, were unprecedented in variety and scope in an American textile machinery exhibit. While the novelty appeal of shuttleless looms displayed by two manufacturers attracted large crowds, the many improvements and solid performance characteristics of the many other types of conventional looms on display impressed visitors, too.

Among the shuttleless looms, **Draper's** display of three models of its rapier type weaving machine, the "DSL" were almost continually surrounded with visitors during every hour the exhibit hall was open. One of the three DSL models was demonstrated weaving a sports denim fabric at 250 picks per minute; the second a spun rayon flannel at 238 ppm, and the third was operated at reduced speed weaving a scrim fabric for the purpose of permitting observers to study its operating functions with ease.

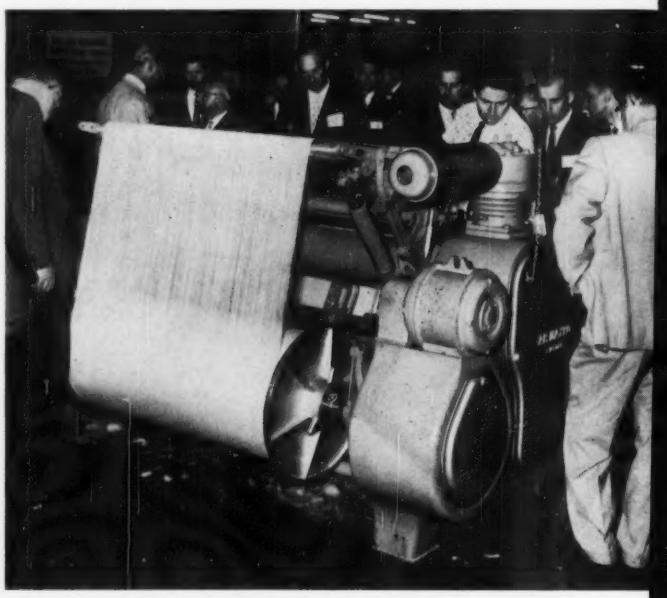
Draper also demonstrated two conventional looms. One was a 50" X-3 model, operating at approximately 200 picks per minute weaving an acetate dress goods fabric. Said to be highly versatile, the X-3 loom is designed to weave all fabrics normally woven on the X-2 and many synthetic fabrics commonly woven on the Draper XD model. The X-3 is nearly 500 pounds heavier than the X-2 and is thus said to achieve added stability. The added weight is distributed in such a way so as to provide for smoother running as well as the ability to stand peak stresses at high speeds.

The second shuttle loom demonstrated at the Draper exhibit was the XB model, shown weaving a blend of nylon, acetate and viscose rayon into a suiting fabric at 175 picks per minute. According to Draper, the loom, designed primarily to weave heavy suitings, incorporates many of the features of the XP-2 loom. The XB model at the show was a 72" model equipped with two sets of cams on an auxiliary shaft and two sets of clock spring top, each of which features easy adjustment of spring tension from outside the housing. The XB can be built with a dobby and with or without a 2 x 1 box motion.

Ranking with the Draper shuttleless loom as an attention getter was the **Maxbo** shuttleless loom displayed by **Edda International Corp.**, sales agent for the loom's American builder, **Southeastern Loom Works.** Invented in Sweden by an Esthonian engineer, Max Paabo, and manufactured in that country by Kooprativa Forbundet, the loom inserts filling yarns by means of a jet of air carrying the pick across the shed. At Atlantic City, the loom on display was operating at more than 320 picks a minute.

Among loom displays, the exhibit of **Crompton & Knowles** was consistently crowded during the entire course of the show. Operating in the C & K display area were three automatic bobbin-changing looms of the new C-7 series; each is designed for weaving a specific kind of fancy fabric.

Shown for the first time at Atlantic City was the C-7S loom which combines all the features of the earlier members of the C-7 series of looms along with a number of additional advantages. Among these are new control features which makes "simple and gentle" the rotational action required in the selection of the proper replacement bobbin. After each transfer, the magazine advances one position so the maximum motion required for the next transfer cannot exceed three position.



LOOK, MA, NO SHUTTLES—The Maxbo loom, which inserts the pick with a jet of air, fascinated millmen at the show

Also demonstrated by Crompton & Knowles were the C-7 and the C-7 Terry Loom. The C-7 is available in widths of 56", 58" and 60" between swords and 4 x 1 box, for the production of fancy cotton dress goods, ginghams, and blends of spun synthetics. Arranged to handle 20 harnesses, the 3/8" gauge dobbies on these looms have generally been equipped with punch pattern indication in place of the wood dobby pattern chain and pegs used on older looms. Advantages of this improved dobby system are economies in pattern chain components, in production of initial patterns, and in duplication of patterns.

C & K's C-7 Terry Loom, in operation at the show, was equipped with a new reversing roll motion which provides space curtailment where long box and harness patterns are required since no chain racks are needed. With the reversing roll device, the pattern is unwound from one roll and wound onto another for half the towel length. Then the rolls reverse and wind the pattern back onto the first roll, repeating this as many times as is necessary to run out the warp.

A popular attraction for visitors at the Crompton & Knowles exhibit was the opportunity to test for oneself the ease with which the electric controls on these looms permit "push-button operation". All looms of the C-7 class have these features: no handles to start and stop the loom; push-button controls are used instead; new transmitter drive with power reverse to replace the mechanical clutch and brake used on earlier looms; an absence of mechanical "protection" parts; a radically different type of binder.

The display of foreign looms at the show was the most varied ever seen in the United States. **British Northrop Ltd.**, demonstrated a number of looms including its high speed single shuttle equipped with Leesona's Unifil quill winder. Advantages of Northrop looms, evident in the models demonstrated, are the modern "topless" silhouettes; the specially strengthened framing with a rigid cross grit between the loom sides, which carries the main crankshaft bearings; a new picking motion, and an advanced form of shuttle motion.

(Continued on Page 58)

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ORLON

It's Made
From the

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SWEATER
YARN

RESULT?

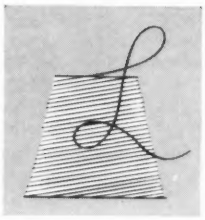
Yarn spun from Turbo-Orlon produces a variety of knitted garments

- **BULKY**
- **INTERLOCKED**
- **JERSEY**
- **FULL-FASHIONED**

with scientifically controlled shrinkage during final finishing. Whatever the characteristics required Turbo-Orlon can provide the answer.

HERE'S WHY:

In the Turbo process fibers of famous DuPont Orlon* are s-t-r-e-t-c-h-e-d and b/r/o/k/e/n into variable lengths. Some fibers are then relaxed in a special steam process before blending with stretched but unrelaxed fibers . . . to produce a High Bulk yarn of superior loft and hand.



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Expansion of Laboratory Facilities at Kenyon

Here finished goods are certified for functional satisfaction, by such tests as: Fadeometer; gas-fading; hot press (hand iron and machine); Launderometer AATCC test; washing and drying in home-type equipment; shrinkage; Autoclave steam test; crocking; perspiration, drycleaning.

Furthering the trend to scientific evaluation and control of textiles, Kenyon has expanded its laboratory facilities into four separate and distinct units:

1 **Quality Control Laboratory** — illustrated above — proves the quality of finished goods for functional satisfaction in use.

2 **Production Control Laboratory** ensures conformance of work in process with Kenyon standards of excellence.

3 **Physical Test Laboratory** satisfies the most rigid specifications of Government and Industry under 100% environmental control.

4 **Development Laboratory** conducts the pioneering work which has made Kenyon the leader in finishing fine synthetics.

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125 WEST 41st STREET, N. Y.
TEL. OXford 5-2060, 5-2061

NEW FABRICS

NEW YARNS

100% Creslan Blankets

Blankets made of 100% Creslan were introduced early in May in the six greater-New York stores of R. H. Macy Co. The nylon-bound blankets were produced by Lebanon Woolen Mills. The blankets can be machine washed and tumble dried at low temperatures. Moth and mildew proof as well as non-allergenic, the lightweight blankets have a soft hand and a napped finish. *For further information write the editors.*

Nylon Tape Fastener

A variation of the Velcro nylon tape fastener has been introduced for use in the electronics and electrical industries by Velcro Corp. The new item, called "Back-to-Back" Velcro, consists of a single strip of nylon tape faced on one side with tiny hooks and on the other with soft loops. Its shear strength is 6 to 8 pounds per square inch. Made entirely of nylon, it is a non-conductor of electricity and, therefore, has excellent insulating properties. The new tape grew out of the need for an efficient device to hold wires together in separate groups. In use, the tape is looped closed around the wires. *For further information write the editors.*

New Metallic Thread

DMC has introduced a new metallic thread of high quality for both hand and machine embroidery. In gold or silver, the thread will not fuzz, tarnish or fray. It is packaged on plastic spools containing 65 yards. *For further information write the editors.*

Vinyl Wall Fabrics

Royaltex is the trade name for the new laminated wall fabrics developed by Polyplastex United, Inc. The Royaltex patterns, which range from loosely woven jute fibers and imported linens to designs utilizing genuine butterflies, leaves and sea heather, are protected against facing, dirt and other injury by a permanent layer of scrubbable Krene vinyl film. Supplied in sheets approximately 8 feet long and 2 feet wide, Royaltex is backed by a layer of aluminum foil which serves as a moisture barrier. A layer of high quality paper is bonded to the under surface, permitting application by conventional paper-hanging techniques. Plain patterns retail at 34 to 50 cents per square foot, with more elaborate designs priced at about 65 cents. *For further information write the editors.*

Caprolan Safety Belts

Use of high-strength Caprolan nylon yarns by manufacturers in making automotive safety seat belts is said to permit finer styling and the use of eye-pleasing colors. Caprolan nylon, produced by Allied Chemical Corp., is said to have good affinity for dyes. *For further information write the editors.*

Aluminum Fabrics

Baxter, Kelly & Faust, Inc., has developed a new process for impregnating any textile material or fabric with aluminum. The process is said to permit the fabric to retain its original strength, texture, design and flexibility while making the material heat resistant up to 2500 degrees F. Its applications are expected to range from heat-resistant safety gloves and aprons to mittens and aprons for cooking on charcoal or outdoor fires, and from fireproof draperies to curtains for industrial furnaces. *For further information write the editors.*

Two New Committees Appointed

Two new committees of the Textile Distributors Institute have been appointed by Nat Leavy, president. Mr. Leavy is the president of Goldstein & Leavy, Inc.

The committee on design registration, trade marks and copyrights has been delegated the duty, subject to the general authority of the board of directors, to study various matters relating to the administration of the respective services, and to make recommendations thereon to the board of directors at the proper times. The committee has the following members: Ira Jacobson, chairman, Cohn-Hall-Marx Co.; George W. Gibson, William Skinner & Sons; Louis D. Levine, Fabrics by Joyce, Inc.; Benjamin W. Rosenblum, Benrose Fabrics, Inc.; Philip Vogelman, Onondaga Silk Co., Inc.; Nat Leavy, ex officio, and Walter Ross, ex officio, Rosewood Fabrics, Inc.

The second committee is the design registration appeals committee and its function is to vote individually as to its members' respective opinions as to the degree of similarity between the rejected design and the design previously registered with the Bureau. This service is only initiated at the request of the owner of the rejected design in order to avoid any objection to having a design shown to competitors within the industry.

Members of this committee are the following: Ira Jacobson, chairman; George W. Gibson; Arthur J. Herzig, Jr., Kent Fabrics Corp., Walter Hyman, Maxwell Textiles Division, L. Hyman Co; Frank D. Levi, Belding Heminway Corticelli; Michael Ross, Fuller Fabrics; Arthur Rashbaum, French Fabrics Corp; Lee Sherman, Fabrex Corp; Alfred Stein, Stein & Fishman Fabrics; Nat Leavy and Walter Ross, ex officio.

Labeling Law Amendments

The Federal Trade Commission has issued four amendments to the Textile Fiber Products Identification Act. The amendments generally clarify and relax certain of the act's provisions. Rule 14 was revised to now permit manufacturers of products containing miscellaneous scraps or textile by-products of unknown fiber content to label such products with the percentage of both knowns and unknowns. Another modification allows use of the terms "all" or "100%" in conjunction with unknown fiber content.

Promotion and advertising of exempted articles which contain some textile fibers is now permissible under a revised Rule 45 without danger of losing their exempt status. Another modification of Rule 45 excludes so-called "wood-weave" draperies, window coverings and table place mats from the requirements of the act. Final revision of Rule 16 permits a registered identification number to appear on a separate label near the label containing other required information. Rule 29 now allows makers of garments having two or more parts to include all required data on one label.

TDI Annual Meeting Oct. 13

Thursday, October 13, has been chosen for the annual meeting of the Textile Distributors Institute. Jackson E. Spears, vice president, Burlington Industries, will be a speaker. Further details will be reported at a later time.

Copyright Service Planned

A copyright service for members of the Textile Distributors Institute will shortly be initiated by the Institute, according to an announcement by Nat Leavy, president.

Steinam in New Quarters

A. Steinam & Co., Inc., has moved to 1441 Broadway, New York City from its former office at 343 Fourth Ave. The firm will occupy an entire floor in the Broadway location.

Wullschleger Makes Gift

Arthur Eugene Wullschleger, Chairman of the Board of Wullschleger & Co. was cited recently at a special presentation meeting held at The Smithsonian Institution. Wullschleger presented the textile division with examples of hand-screened printing and the equipment used in the silk-screening process. Present on the dais were United States Congressman and Mrs. Edward Dooley of Larchmont, N. Y. and Mr. and Mrs. Arthur H. Motley.

Motley, President of Parade Publications and the newly-elected President of the United States Chamber of Commerce, was the speaker at this presentation. He praised Wullschleger for his continuous contribution to the growth and art of textile weaving and printing.

Richelieu Expands

Richelieu Fabrics, Inc., recently moved into larger quarters at 101 West 37 Street, New York City. It was formerly located at 256 West 36 Street. According to Richard Deneau, president, the move was made necessary by an expanding volume of business. Richelieu specializes in synthetic and cotton fabrics for the women's and children's apparel trades.

Wolf Moves Offices

Jacques Wolf & Co., subsidiary of Nopco Chemical Co., has moved its offices from Clifton to the main office of Nopco at 60 Park Place, Newark, N.J.

Amato Dies

Joseph A. Amato, vice president of James Talcott, Inc., died suddenly early last month while on a business trip to the west. He headed Talcott's factoring division, and was well known among textile converters.

John P. Holmes

John P. Holmes, vice president and director of Celanese Corp., died on May 29 at his home in Bronxville, N. Y. He was 54. A native of LaGrange, Ga., Holmes joined Celanese in 1927 as a yarn salesman.

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IMPROVED ANTISTATIC FINISH

A report on Aston 123

Part 1: The chemistry of Aston 123

By Wladek Ginilewicz

THE PRESENT PAPER deals briefly with the chemistry of Aston and its influence on the properties of textile fabrics. The function of Aston is that of a durable static protector. Uses of Aston are well known and the utility of the material in textiles is fully realized and has been reviewed earlier (1). Applications of polyelectrolytes of the Aston type are numerous, from blue-sky uses, that of parachute protection, to down to earth soil conditioning.

Aston is a polymeric material containing repeating reactive sites, tertiary amines, capable of cross-linking with some di- or polyfunctional, relatively small, molecule. The Aston is cross-linked on a fabric generally by heating; this forms an electrolytic film around the fiber.

In general, polyelectrolytes are polymeric substances whose constituent macromolecules carry repeating ionizable groups. Electrochemically, there can be three types of polyelectrolytes: polyacids, polybases and polyampholytes. The polyelectrolytes are not new in nature since the very content of our body such as protein, nucleic acids, etc. are polyelectrolytes. The polyelectrolytes combine in one molecule the characteristics of two distinct classes of chemical compounds: polymers and electrolytes. We may, therefore, expect to find similarities to each type (4).

An electrolyte has the ability to carry an electric current in solution; this is the outstanding characteristic which distinguishes electrolytes from all other chemical compounds. The electrolytes are classified also as weak or strong, according to the magnitude of the conductance of their solutions. In a weak electrolyte, a relatively small fraction of the molecules is dissociated into ions, while strong electrolytes have complete dissociation into component ions. The relative conductance of an electrolyte depends on the solvent chosen. Sodium chloride is a weak electrolyte in liquid ammonia, but a strong one in water, a medium of high dielectric constant.

The polymer part of a polyelectrolyte will determine, by respective spacing of the functional groups, whether the structure will be tightly bound or not. The rigidity or plasticity of the polymer lattice on cross-linking will cause consequent changes in hand of the fabric.

The same factor will affect the extent of water absorption. High water content will plasticize the film and may lower the resistance to wet abrasion. The nature of the chemical bond connecting individual links, either in the linear polymer itself or those that were introduced with cross-linking, will determine the stability of the polymer to degradation. For example, thermal stability will establish the degree of change in color on heating. It is, therefore, by a careful choice of various components that one derives a functional finish.

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Wladek Ginilewicz

Function of Aston

The present synthetic textile fiber trend is toward stronger and finer fibers. This is usually achieved by higher order of crystallinity or orientation, or by inherent properties of the polymer which constitutes the fiber. This state of matter usually has its consequences; possibly the most important one is a lack of sufficient moisture regain. The moisture would act as a conductive solvent and afford a continuous ionizing film. Figure 1 shows the relationship of surface area resistance (SAR) to percent moisture regain. It is apparent that the higher the SAR, the lower the percent moisture regain of various fibers.

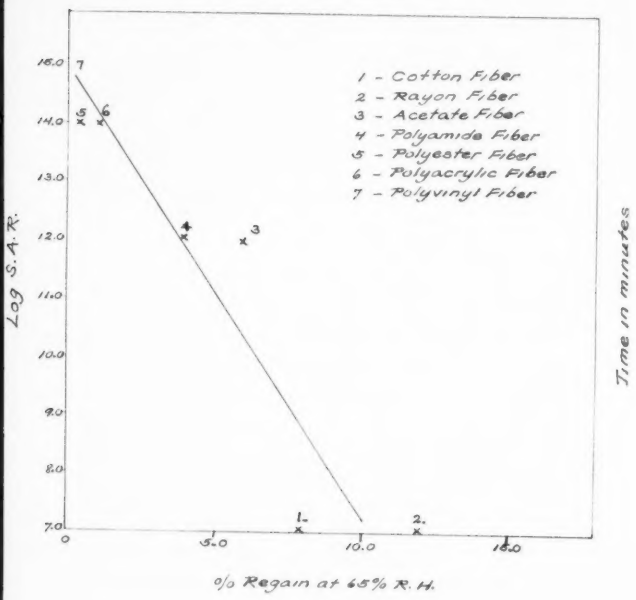
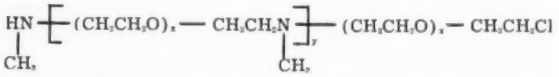


Figure 1

The function, therefore, of an anti-static agent of the form of Aston is to provide on the periphery of the fiber and fiber assemblies, a conductive film. As was already demonstrated (2), the mere presence of electrolytes is not sufficient. A continuous envelope of a film which will absorb or contain water is required, which in turn will provide a continuous moisture layer. The nature of the ions may not be very important, they may be either tramp ions or deliberately provided.

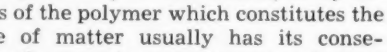
Structure of Aston

A previous disclosure (3) revealed that the antistatic polymer of the Aston type is a polyamine containing ethylene oxide interspacing groups. The polyamine contains preponderately tertiary amine groups along the



polymer chain. The end groups are essentially secondary amines, but they may also be chloride groups as shown above. This polymer is capable of undergoing further addition reaction.

The addition reaction is usually acomplished on a fabric by curing with a cross-linking agent. The cross-linking will form polyquaternary groups along the polymer and some tertiary or quaternary groups at each end. The polymer now, by common classification, is a thermosetting resin. The cross-linking with previous products was accomplished by polyethyleneoxide diiodide.



The three dimensional network formed on cross-linking is an insoluble film around the fiber. This film had some inherent problems which prompted the present investigation to make the resin more suitable for textile processing and end use performance. With the diiodide cross-linking agent, the pH of application was critical. Very little reaction in comparable time and temperature was obtained at lower than pH 9.0. It is common knowledge, however, that in textile finishing lower pH's are, in many cases, desirable. For example, fabric of Dacron and worsted should preferably be cured under acid conditions. Similarly, fabric of Dacron and cotton may have cotton stabilizing resins which are catalyzed by acids or acid salts.

New Cross-Linking Mechanism

A number of commercial and experimental difunctional compounds were examined as potential cross-linking materials for Aston type polymers. The diepoxides showed the most promise from preliminary investigations. Other investigators, also, have been active in this field (8).

An experimental technique was developed for preliminary screening of the diepoxides. The method consists essentially of a glass pressure test tube covered with a plastic screw cap with a rubber lining for sealing. The Aston in solution was then charged with various additives, sealed and placed in a constant temperature oil bath. The sample was heated until an easily detected gel was formed. For greater accuracy, a number of samples were placed in the oil bath and withdrawn at various time intervals, thus reducing the time variation to minimum. The sample did not have any mixing except thermal agitation.

By this simple and quick in vitro method even gaseous materials could be used in the investigation. This method does not replace the usual laboratory evaluation on fabric, but rather supplements such applications. In Figure 2, the ratio of Aston to cross-

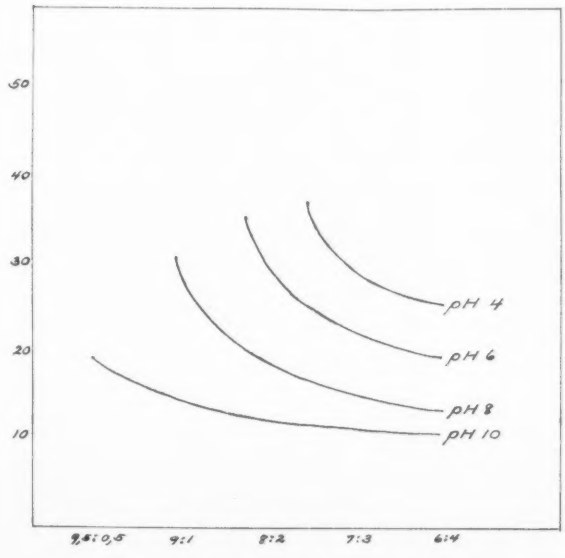


Figure 2

linking agent was established. As shown, there is little to be gained in time of curing by applying a greater ratio than 7:3 Aston to cross-linking agent. The stoichiometric proportion of Aston to Eponite 100, for example, would be 8.3 to 1.7 of Aston to cross-linking agent in order to react all amines; therefore, even an 8:2 ratio already contains a slight excess of the diepoxide.

It is, however, possible that the ratio of diepoxide to Aston may have to be varied to satisfy special requirements. The same graph also shows that at extreme alkaline conditions one would not require as high a ratio of cross-linking agent. Among other correlations obtained between the in vitro method against that of in situ, is a definite relationship between pH of the bath and the time of curing. As seen in Figure 3, the fastest rate is in alkaline media. The

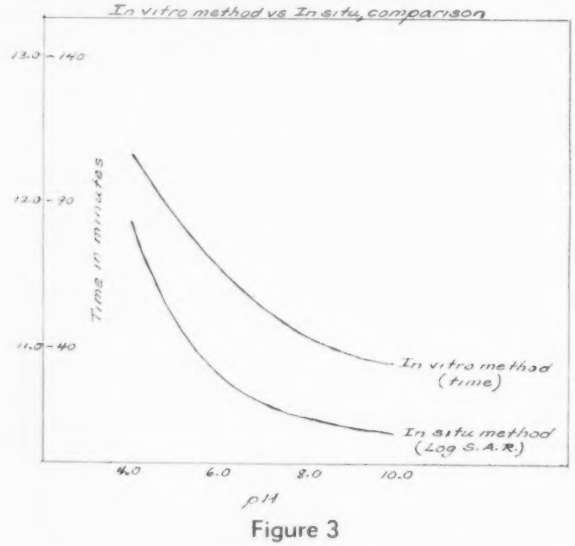
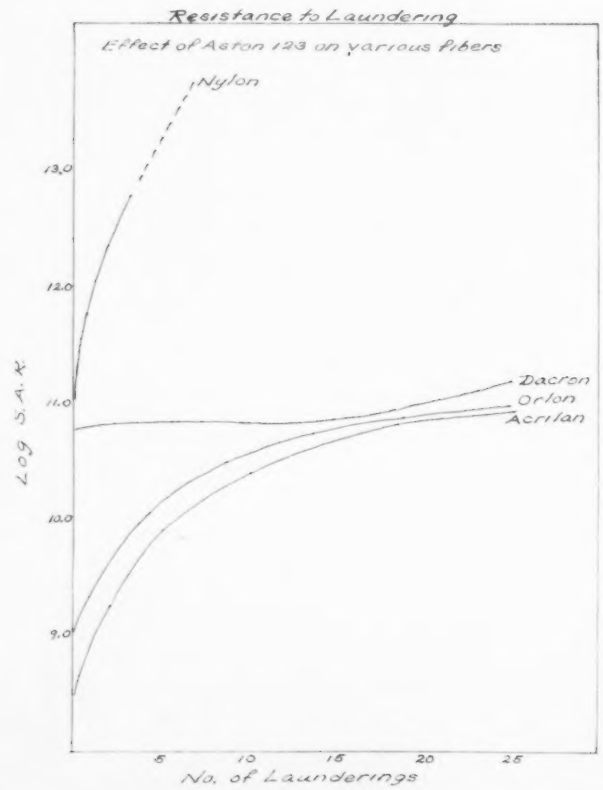


Figure 3



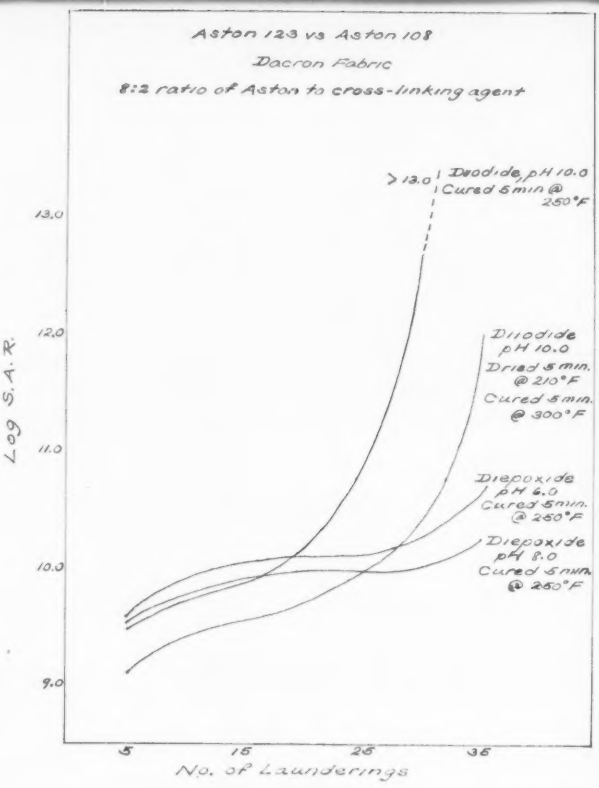


Figure 5

curve develops a plateau between pH 6 and 10 which is a good workable range. The second curve on the same graph substantiates the above, showing lower durability at lower pH on a taffeta of "Dacron". Therefore, one should not use extremely low pH when utmost durability of effect is required. Since at lower pH only partial curing is obtained, the hand of the fabric is usually softer.

The utilization of diepoxides as a cross-linking agent was extended to various fibers to determine the level of effectiveness in terms of the number of launderings. The finish was shown to be quite durable to fabrics of Dacron, Orlon and Acrilan and relatively of lower durability on nylon fabric as shown in Figure 4.

Physical Properties

A systematic investigation was made to determine the relative merits of the new system. To our satisfaction, this phase of investigation has been most rewarding.

Lower curing temperatures were required to accomplish the desired effect. Figure 5 shows one step drying and curing with diepoxide cross-linking agent at 122°C. (250°F.) for five minutes at pH 6.0 and 8.0.

For comparison, the same curing conditions at pH 10 were chosen for diiodide cross-linking agent. Also, normal curing condition of drying at 100°C. (212°F.) and curing at 150°C. (302°F) for five minutes each was used for diiodide. The results with diepoxide cross-linking agent at lower curing temperature are comparable to normal curing of Aston and diiodide.

Table 1 shows comparative reflectance figures for fabric of Dacron containing 2% of Aston o.w.f. (the fabric was not afterwashed). The results are quite apparent; the diepoxide cross-linking agent shows better initial color than Aston with diiodide. However, when the curing condition for Aston and diiodide is lowered, the color improves and is comparable to Aston and diepoxide treatment, although the

Figure 4

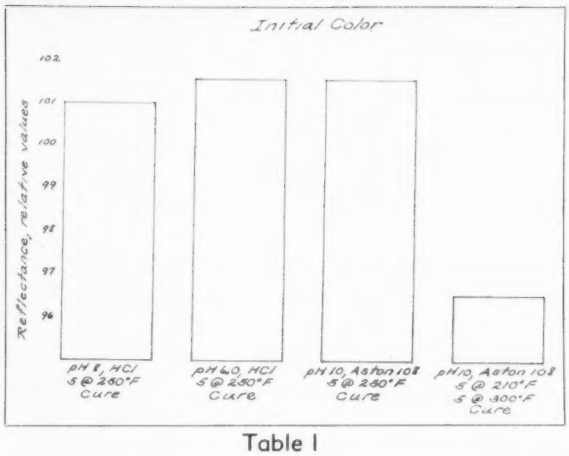


Table I

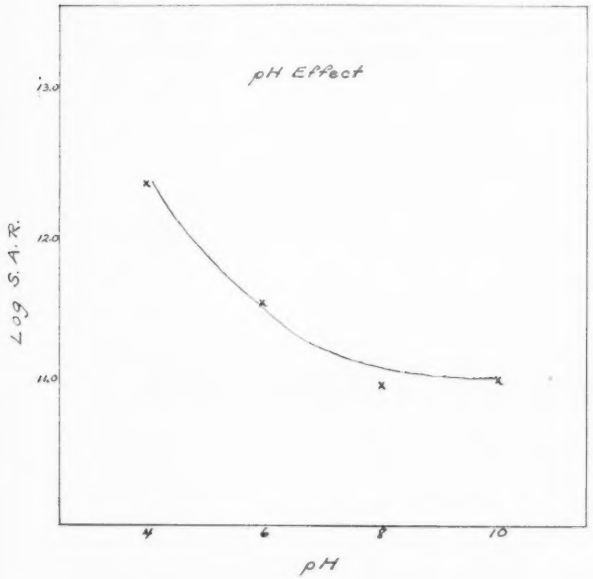


Figure 6

durability of diiodide is significantly decreased at the lower curing temperature.

The effectiveness of the Aston and diepoxide system under various pH's is shown in Figure 6. Fabric of Dacron shows low surface area resistance within the range of pH 10 to pH 4 after extensive launderings.

Significant improvements in original color retention after high charge dry cleaning was obtained with the diepoxide system. It is interesting to note the effect of various acids or the anions of the acid on change of color, Figure 7. It is quite possible that further improvement can be made in retaining the initial color of the fabric after high charge dry cleaning.

The resistance to domestic bleach, Clorox, was also noted to be improved significantly. Figure 8 shows the relative durability of the finish when laundered with Clorox bleach. Here again, it is interesting to note the effect of various acids or their anions.

Significant improvement in gas fading has been observed. This is particularly important when long storing of various fabrics is required. It is apparent from Table 2 that the Aston and diepoxide system shows good color retention when subjected to gas fading (3 cycles); samples were not afterwashed.

Since the use of diepoxide has been shown to be

Table II

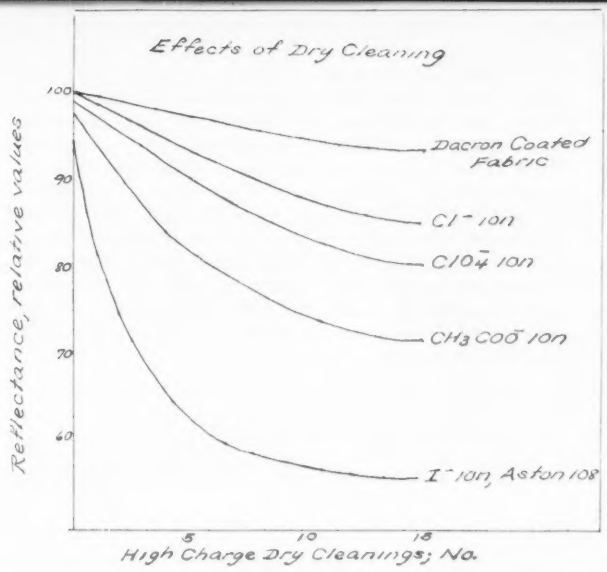


Figure 7

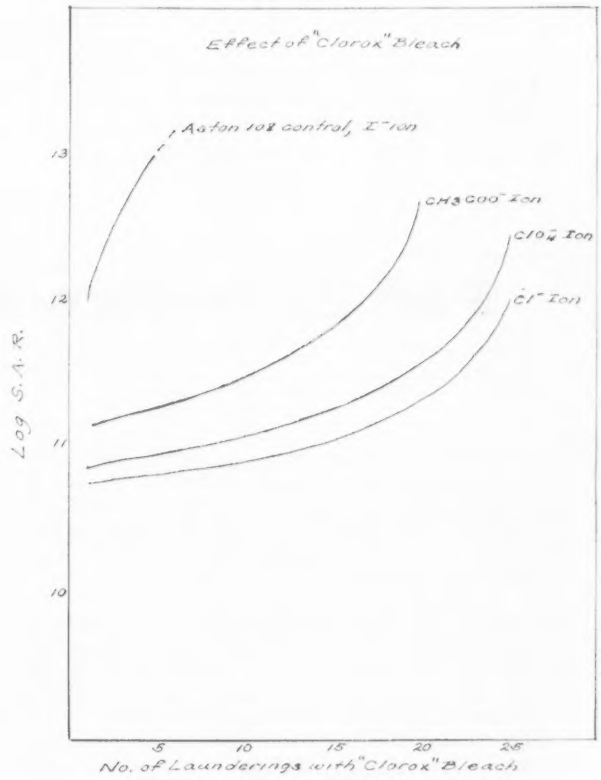
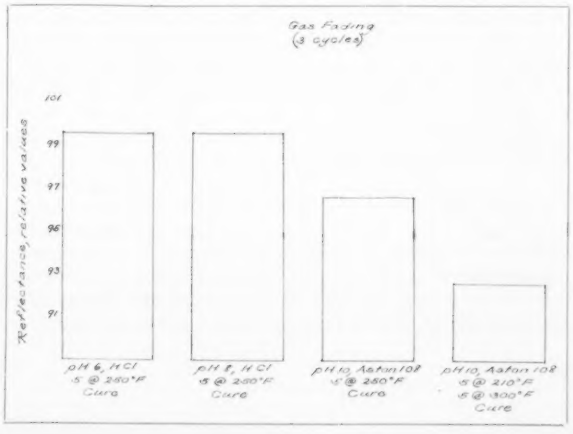
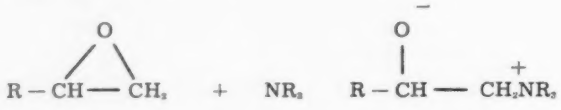


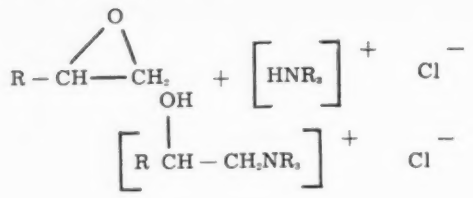
Figure 8



useful with resultant improvements in the Aston finish, the mechanism of diepoxide reaction with tertiary amines in Aston should be briefly discussed. The reaction of the oxirane ring with tertiary amines is not new (5). What is new, however, is the effect of this class of compounds when reacted with Aston. The reaction of ethylene oxide with triethanolamine salt of sulfuric acid or hydrochloric acid results in tetraethanolammonium sulfate or chloride. A rather recent source (6) postulated that the first step of the reaction of tertiary amine with epoxides proceeds in the following manner:



where the anion reacts further with oxirane ring thus polymerizing. If we now have initially the amine salt in place of free amine, the following reaction will take place.



which is identical to the triethanolamine hydrochloride and ethylene oxide reaction mentioned before.

Summary

A brief outline is made of the requirements and the nature of an anti-static finishing material of the Aston durable type. Also, the physical and chemical properties are illustrated for Aston 123, a durable antistatic material cross-linked with diepoxides. The mechanism of diepoxide reaction with Aston is briefly discussed.

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Part 2: Performance of Aston 123

By Morton Schlesinger

To complement the paper above covering the chemical and physical properties of Aston 123, I want to touch upon the performance characteristics of the durable anti-static finish. This will be related in two parts that will touch upon the highlights of the fundamentals of application of this finish, and a summary of the properties imparted to fabrics treated with Aston 123. My object is to show the practicality and ease of application and to stimulate or encourage the use of this new finishing formulation on the rapidly increasing synthetic fabric market through the textile technologist and fabric developer.

Since the start of the Aston development, the application methods of a textile finish by padding have always been maintained, and the desirable feature of a water soluble or, at the most, a colloidal solution in the padding bath has been present. Application is accomplished by dip/squeeze methods on a quetsch, padder, woolen crab, or any suitable piece of equipment that will give a uniform and known deposit of the finish.

After padding, the fabric is dry/cured in one pass by conventional means such as covered tenters, loop, air-lay or roller driers. If an afterwash is required, we have been recommending an overflow pad wash and rapid, low temperature drying on equipment suitable for the fabric being processed. Dry finishing can either precede or follow the Aston treatment; heat setting on whites and pastels should generally be done prior to the durable anti-static finishing.

In order to place the application sequences of Aston 123 in its proper perspective, a comparison of the step-wise process is made in Table I against some of the specialized and familiar durable finishes now being applied to textiles. Aston 123 conforms to conventional mill applications and, since the drying step includes the resin polymerization, the process is relatively simple.

Schlesinger is manager of customer services of Onyx Chemical Co., a post he has held since 1956. Earlier, he was employed as technical director of the Nu-Dye & Finishing Co., Paterson, N. J., and as plant chemist and technical superintendent of the Colgate Piece Dye Works. He holds a B.S. degree in textile chemistry from Lowell Textile Technological Institute, and did graduate work at Massachusetts Institute of Technology.

Morton Schlesinger

Table I
PROCESSING STEPS

Aston 123		Vs.	Other Durable Functional Finshes	
Aston 123	"W & W" Cottons	Pyridinium Type Repellent	Silicone	Aston 108
1. Pad	1. Pad	1. Pad	1. Pad	1. Pad
2. Dry/Cure	2. Dry/Cure	2. Dry	2. Dry/Cure or	2. Dry
		3. Cure	3. Cure	3. Cure
3. Afterwash, if Required	3. Afterwash, Recommended Generally	4. Afterwash, Required		4. Afterwash

The padding bath is made up of Aston 123, a di-epoxide such as Eponite 100 manufactured by the Shell Chemical Co. and Neutronyx 600, an Onyx non-ionic solubilizer for the epoxide. The Eponite 100 is mixed with Neutronyx 600 prior to the addition of Aston 123. The bath is brought to volume with water at room temperature and the pH is adjusted, if desired, with hydrochloric acid or in some specialized cases we have used a zinc fluoborate/acetic acid combination. The final appearance of the bath is clear and has the fluidity of water.

Aston 123 baths are formulated primarily on the basis of the following requirements:

1. Aston 123/epoxide solids add-on desired
2. Aston 123/epoxide solids ratio
3. pH

The most important factor in respect to the degree of durability attained with Aston 123 is the percentage of Aston/Eponite 100 solids deposited, based on the weight of fabric. In order to deposit the desired solids, it is necessary to be fully familiar with the wet pick-up on the specific fabric being treated and the equipment in use. Once the wet pick-up has been determined on a particular fabric, production runs can be maintained in a manner identical to all other finishes. As the number of fabric constructions increase, the collection of wet pick-up data will enable the finisher to make an immediate choice of bath concentrations, in line with his customer's durability and hand requirements.

The increase of solids add-on will result in higher degrees of durability to washings and dry cleanings. In practice, we generally suggest solids between 1.0% to 2.0%. While I have not included in the list of factors used in bath formulation the reasons for choosing a specific solids add-on, I want to point out that the type of fiber and fabric construction play important parts in the resultant level of durability. Acrylics and polyesters give the highest durability, followed by triacetate and then polyamides.

Wool and silk are perfectly suitable for Aston 123 application and fall into the medium range of the fiber classification for durability. In respect to fabric construction, I will oversimplify the observation by saying that tightly constructed fabrics display better durability than loose, flexibly woven or knitted fabrics.

The effect of variation of solids on hand is much less than its effect on durability, but is a significant consideration when a light soft touch is desired. Color change is not as sensitive with respect to solids add-on as the durability. Color change with Aston 123 can be accurately described as comparable to the change caused by the use of nitrogenous thermosetting resins. For whites, an adjustment can be made in dyeing which results in good, neutral whites but not the highest blue-white hue.

Changes in Aston 123/epoxide solids ratio and pH result in effects similar to solids alterations but of a lesser magnitude. A summation of these changes is shown in Table II.

Table II
EFFECT OF ALTERING BATH CONSTITUENTS

Highest Durability
Full, Firmest Hand
Maximum Shade Change

Solids Add-On	Aston/Epoxide Ratio	pH
2.0%		11
	6:4	10
	7:3	
1.5%		
1.0%	8:2	8
0.5%		6
0.25%	9:1	4
		2
0.125%	9.5:05	

Low Durability
Softest Hand
No Shade Change

The above three conditions can be chosen for a particular fabric to give high durability, a soft hand and minimum shade change.

Aston 123 is extremely versatile for drying and curing conditions in mill work. Temperatures from 220°F. to 400°F. have been utilized successfully and laboratory results show that polymerization has occurred at 130°F. after 16 hours. This step must be denoted as "dry/cure" because additional time must be allotted over and above straight drying time to effect a cure. In general, from 3 minutes at lower temperatures to 30 seconds at higher temperatures should be added to the exact drying time for proper cures. For example, a taffeta of Dacron polyester fiber will dry/cure at 300°F. for one minute on a covered frame; a suiting of Dacron/worsted in 6 minutes at 270°F.

It is suggested that white and pastel fabrics treated with Aston 123 be afterwashed following the dry/cure step, and the recommended method is to utilize overflowing hot water, 110°-130°F., on a pad in line with a drying unit. This mild wash will remove any unreacted monomers that may discolor in storage, and this procedure will also considerably improve the shade of white. Medium and dark shades do not require this afterwash. Synthetic blends with wool

Table IV
APPLICATION CONDITIONS FOR SPECIFIC FABRICS

Application Conditions	Dacron, Taffeta,	Dynel Industrial Fabric (Dope Dyed)	Dacron/Worsted, Suiting	100% Wool Suiting
% Solids	1.5%	2.0%	1.0%	1.0%
Aston: Eponite	8:2	7:3	7:3	7:3
pH	6.8-7.0	8.0	6.5	6.0
Dry/Cure	300°F/1 Min.	250°F/6 Min.	270°F/6 Min.	250°F/8 Min.
	Afterwashed	—	—	—
	Calendered	Calendered	Sheared Hot Press Decate	Semi-Decate Condition

for the men's suiting trade which are predominately medium and dark shades are not washed after the Aston 123 application.

A summary of the advantages of the processing techniques for Aston 123 are outlined in Table III.

Table III
PROCESSING ADVANTAGES OF ASTON 123

Ease of Bath Preparation—	Solubility of components Room temperature preparation and application.
Range of pH—	Applied at pH 4 to 10 to accomodate fibers, colors, other finishes.
Bath Stability—	Up to 16 hours.
Range of Dry/Cure—	From temperatures of 220°F. to 400°F.

Considerable yardage has been run with Aston 123 on suitings of Dacron worsted and represents a decided advantage in processing cost with the elimination of the separate cure step. Plant applications have also been successful on industrial fabrics containing nylon, Dynel and Acrilan. Also on taffeta of Dacron, Kodel/wool, 100% wool, Acrilan/wool, Dacron type 62, and Antron, formerly nylon 560.

Table IV shows a summary of processing conditions for several fabric types.

The durability levels of the fabrics in Table IV are worth noting. The taffeta of Dacron has withstood 20 machine washes at 140°F., while the Dynel fabric has gone through 75 machine washes at 140° before losing its anti-static protection. Both the suitings of Dacron/worsted and 100% wool have been good through 15 dry cleanings.

The fabrics treated with Aston 123 have, above all the property of dissipating at a rapid rate the build-up of charges of static electricity. As an example of this rapid rate of dissipation which has been experienced by many textile mill personnel is the tremendous spark discharge during the batching of a 100% synthetic fabric on the takeoff of a covered tenter or hot roll heat setter. This electrical shock does not occur on Astonized fabrics nor do you experience the pick-up of dust and lint during these operations on fabrics containing Aston.

The operator can now freely touch the roll and not be rocked back on his heels. This is most convincing to mill people and attests to the efficiency of the finish.

What it does mean to the ultimate buyer is more vital in terms of the elimination of important disadvantages in many synthetic fabrics; the disadvantages caused by static electricity such as clinging, the riding up of undergarments, the discomfort of static discharges when removing garments, the lack of neatness caused either by the attraction of lint and dust or poor draping qualities. Astonized fabrics will eliminate these annoyances and discomforts and provide a significant degree of neatness at point of sale and after the sale, through an extensive number of washings or dry cleanings.

We believe that comfort and feel on synthetic fabrics will be enhanced by a surface finish that will absorb, hold and wick moisture such as is done by Aston 123. Besides comfort, there is a large field for the use of the many superlative advantages of synthetics where the hazard of static electricity precludes its use. This is the industrial or institutional fabric market where explosive or inflammable materials are handled and static discharge represents a great hazard.

The incidence of static retentive materials and the manifestations of static electricity are too numerous to cover in this time. Aston 123 represents a means of overcoming the disadvantages caused by this physical phenomenon in a practical, direct and inexpensive way.

The following products mentioned in the preceding two papers are registered trademarks of these respective companies: Aston—Onyx Chemical Corp.; Dacron, Orlon, Antron—The Du Pont Co.; Arcilan—Chemstrand Corp.; Kodel—Eastman Chemical Products, Inc.; Dynel—Union Carbide Chemicals Co., Eponite 100—Shell Chemical Co.

Discussion

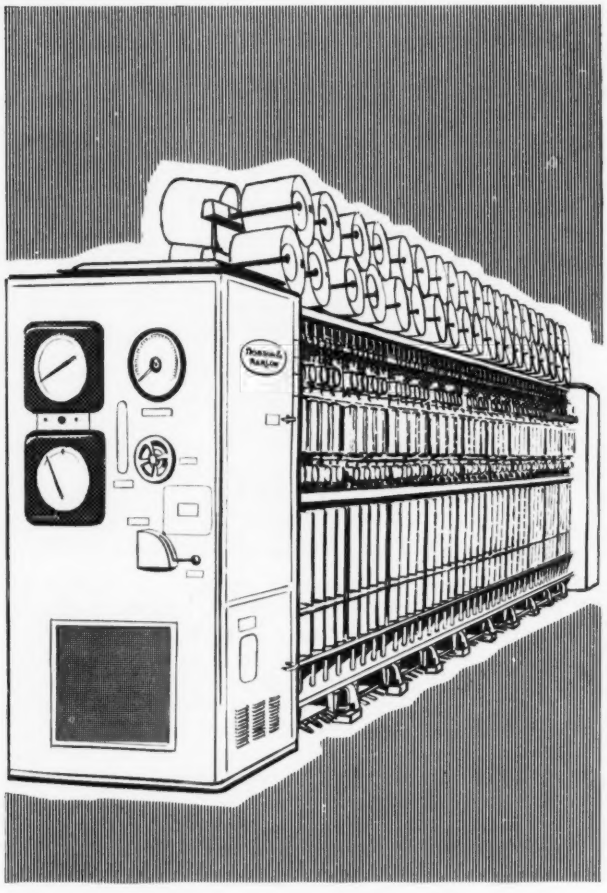
Following the presentation of the prepared papers, there was a discussion period during which the speakers answered questions from the audience. Lee Bidgood, Jr., of the Du Pont Co., served as moderator. The following is a summary of some of the questions and answers.

MODERATOR BIDGOOD: Our first question is directed to Mr. Schlesinger. What is the effect of Aston 123 on the soiling tendency of the fabric?

SCHLESINGER: There is a slight increase in the soiling tendencies of Aston-treated fabrics, somewhat in the range of the soft type of resins that have been applied to fabrics both currently and in the past.

MODERATOR BIDGOOD: Here is a question for Mr. Ginilewicz. Polyamines are known to be good chelating agents. Does Aston 123 chelate copper or iron on washing, and discolor as a result?

GINILEWICZ: Most of our tests done on tertiary amines do not show that and Aston 123 is a tertiary amine.



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Atlantic City Report

(Continued from Page 46)

Other European looms on display included a varied group of machines produced by **Picanol** of Ypres, Belgium, including some models equipped with Unifil loom winders; a battery of looms made by the Swiss firm of **Ruti,** demonstrating its new automatic bobbin loader—a container filled with bobbins wound in the winding room and attached to the loom so that the bobbins are automatically fed into the shuttle. Ruti also displayed a loom equipped with Unifil.

Another Swiss firm, **Saurer**, mounted a major display of looms with emphasis on its fully automatic 6 x 1 drop box loom, and another loom, a single shuttle type equipped with a box loader to eliminate battery plugging.

Narrow Fabric Looms

In the area of narrow fabric looms, there was also much evidence at the show that great progress has been made. **Texnovo** of Milan, represented in the U.S. by **Snedeker & Co.**, Ansonia, Conn., demonstrated its high speed, automatic shuttleless loom, weaving fabrics up to 10 inches with standard selvage. Snedeker also demonstrated the Ultratex needle loom which makes fabric up to 1½ inches with a knitted edge. Both looms, according to Snedeker, take the filling directly from cone or package. Both looms also are said to combine speed with simplicity of operation and to provide big savings and high production of both light and heavy elastic and non-elastic webs.

Fletcher Industries and its associated companies, The Fletcher Works, and Fletcher Southern, demonstrated its Power-Fab, a high speed automatic 5-foot loom, designed to produce heavy government webbings. It operates at 250 picks per minute for Type I to IV government web, elastics and plastic webbing, and up to 300 picks a minute on lighter fabrics, tapes and glass. The new model shown at Atlantic City has been built for the production of heavier webbing and features a rigid construction to make it possible for the weaver to turn out a greater variety of narrow fabrics and webbings on the machine with a minimum of mechanical changes.

Also shown by Fletcher was the company's Multi-Fab loom, a 9-foot, high speed, automatic loom which operates at 300 picks per minute on light and medium fabrics, ribbons, tapes, elastics and glass fabrics. **Crompton & Knowles** in its display area had running a high speed needle loom weaving two pieces of elastic web side by side at the same level at a speed exceeding 1400 sheds per minute. Warp is handled from a creel or beams and filling is applied directly from cones. The loom is equipped with push-buttons to start, stop or jog it.

Dyeing & Finishing Machinery

AN IMPORTANT PART of the show was a wide range of varied exhibits of new machinery for finishing fabrics. **Turbo Machine Co.** showed for the first time a new rotary hosiery dyeing machine that eliminates all gears and bearings within the vessel. It is equipped with a new drive arrangement on the outside of the tank. It is thus unnecessary to disassemble the equipment for repairs. Capacity of the machine ranges from four to 250 pounds per batch. It is completely enclosed by a stainless steel cover with a snug-fitting, sliding type door.

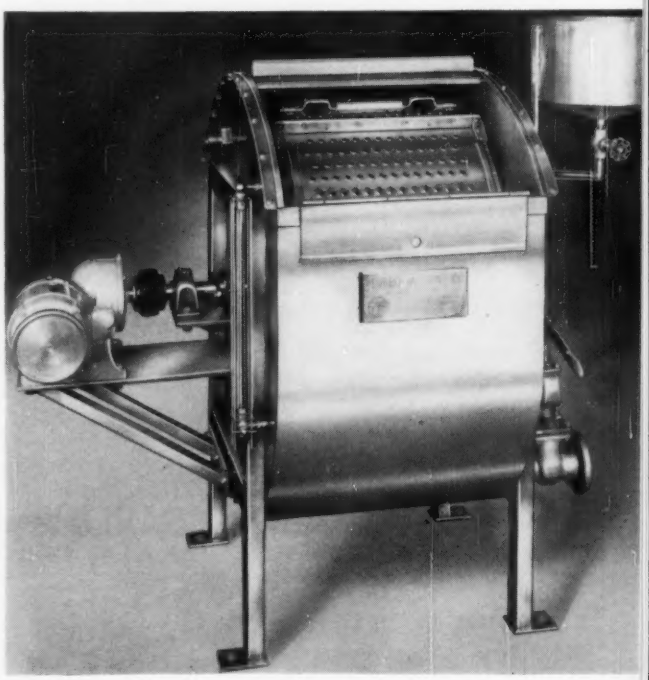
Also shown by Turbo was its new Cross Shearer for looped and pile carpets. The machine shears across the carpet instead of lengthwise and has the advantages, according to Turbo, of reducing handling costs and speeding up carpet finishing. Turbo developed the machine in response to the demand for equipment that could perform both light and heavy-duty shearing. Loops can be cleanly sheared in one pass without extra handling operations. Carpets in any width up to 18 feet, backed or unbacked, can be sheared by the new machine.

Another new development in shearing which attracted considerable interest at the show was the new vertical high speed cotton shear demonstrated by **Riggs & Lombard.** Made by the company's Parks & Woolson Division, the shear, equipped with automatic seam jumper, can be operated at better than 200 yards a minute. Compact, construction enables the shear to occupy less floor space than older types of this machine.

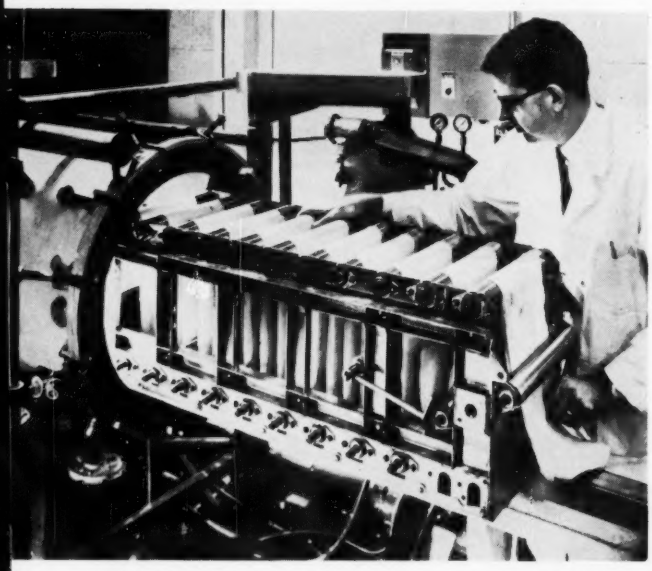
National Drying Machine Co. demonstrated in its exhibit construction details of drying and conditioning units for a wide range of textile uses including loop, print goods, tenter, roll, carpet, skein, yarn, rayon cake, package, stock and swatch dryers, as well as nylon heat setting machines. Shown were details of structural members, insulated panels, seal type doors and such important elements as air control devices, air turning vanes and the company's adjustable pitch circulating fan.

Gaston County Dyeing Machine Co. exhibited laboratory wet processing equipment and parts of its large production equipment including new developments in the hydraulic pumping system. On display were enlarged photographs of the Avesta rapid dryer and semi-rapid recirculating dryer.

Probably the biggest single machine in the show was the two-story finishing range shown by **Proctor & Schwartz.** Developed in conjunction with the company's affiliate abroad, **Artos Maschinenbau**, the range consists of a padder, float dryer, tenter dryer



IMPROVED DYEING MACHINE—A new rotary hosiery dyeing machine was displayed by Turbo Machine Co.



NEWSMAKER—One of the machines shown for the first time anywhere was this continuous pressure bleaching machine in the exhibit of James Hunter Machine Co.

and rotary polymerizer. Among the advantages of this integrated group of finishing machines are said to be savings in space and unprecedented flexibility in operation.

A newly designed tenter frame was displayed by **Van Vlaanderen Machine Co.** Among its advantageous features are a cast iron lathe type bed, bevel gear main drive housings and improved cross stand nut and screw opening and closing device. Van Vlaandersen also displayed a tensionless automatic dye jig which operates at constant speed to accommodate a 36" diameter batch roll. The machine is equipped with a five horse power motor for either tensionless or tension operation.

Robert Reiner displayed an improved Famatex single layer tenter, said to be extremely versatile for tentering, drying and heat setting any woven or warp knit fabric composed of either natural or synthetic fibers. An important element of the Famatex frame, according to Reiner, is an improved pin-clip chain which glides on strips of a graphitized self-lubricating material.

C. G. Sargent's Sons Corp. exhibited a new design gas-fired single pass dryer for drying all fibers. Advantages of this machine, according to Sargent, are low operating cost, less downtime and low maintenance costs. The machine has no internal heating coils, less air restriction and achieves highly uniform drying. Also displayed by Sargent was a synthetic staple opener and blender for use with either wet or dry staple fiber. Among the good points of the machine cited by Sargent are simplicity of design and operation along with great versatility of use and low maintenance costs.

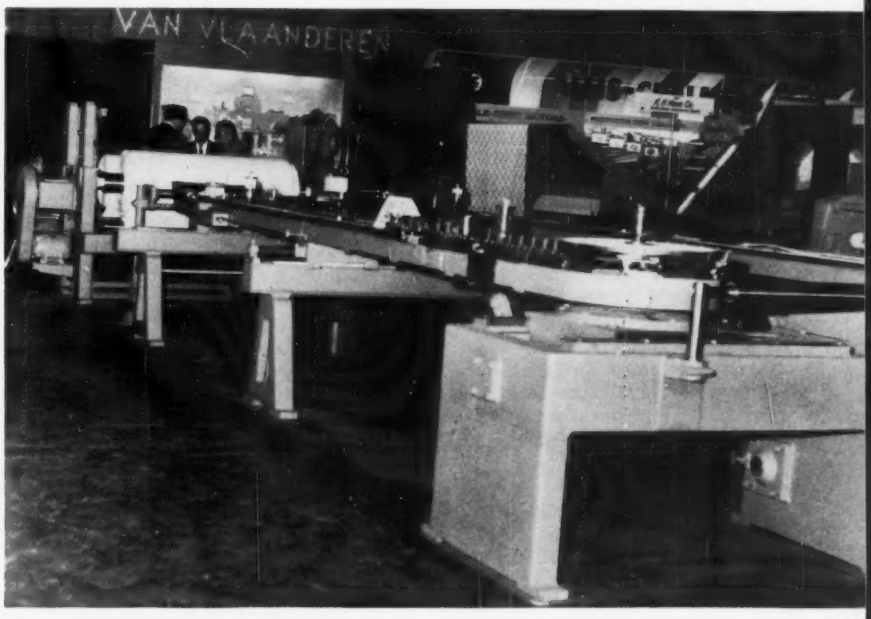
In the area of finishing and drying a wide variety of European equipment was shown by **Cosa Corp.** Among the machines on display were an **Arbach** steaming and finishing machine and a **Schilde** Air Penetration Dryer. In the Cosa display, of special interest to mills and commission dryers processing textured yarns, was the **Croon & Lucke** reeling machine for preparing hanks of crimped yarn for dyeing. Advantageous features of these machines, according to Cosa, are yarn speeds of 1,000 meters a minute, permitting the speedy preparation of hanks of 30,000 meters in length. The Croon & Lucke machines are equipped with special swifts which can sustain radial pressures of 20,000 kilograms.

A group of new drying and finishing machines at the exhibit of **H. W. Butterworth** included the company's latest high speed tentering machine; a new compartment washer, a six-cylinder dryer and a laboratory padding machine. Also shown by Butterworth was a new patented winder built around a new concept of automatic cutting and doffing.

A wide range of tentering equipment was displayed by **Marshall & Williams Corp.** Special interest centered on the company's smallest tenter frame and its heaviest, the latter being newly designed. Also shown was a broad variety of tenter frame drive units in five to 100 horsepower, all torqued for the proper load demand. On display were 15 tenter clips along with a broad range of jaws, controllers and bodies including a two-piece clip.

Allen Warper Co. had on display its new Model "G" warper with patented hydraulic control. The advantages of this method of control, according to Allen, are the maintenance of uniform pressure at all times between the beam surface and the pressor roll that drives the beam. The nip between the pressor roll and the beam is thus always at the same distance and angle so that yarn tension is kept uniform. As a result, hard-shell, soft-center warps are said to be eliminated.

Allentown Bobbin Works, in a display of a broad variety of bobbins and spools for the throwing of



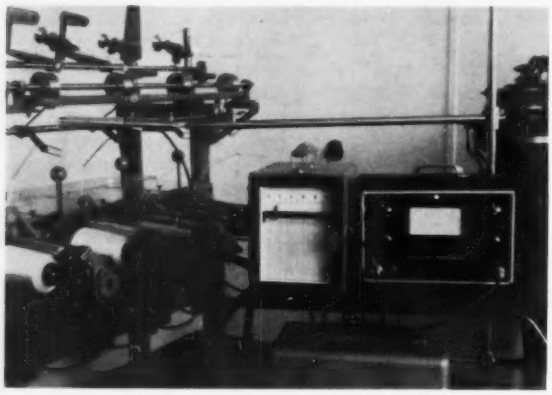
BIG TENTER—The Exhibition included a varied display of finishing equipment such as this Van Vlaanderen high speed heavy duty tenter frame

fine denier yarns, placed special emphasis on its brazed aluminum two pound take-up bobbin. The fact that barrel and heads are brazed together into a single unit prevent yarn trapping. The bobbin is also said to have exceptional strength at a price no higher than ordinary bobbins.

Textured Polyester Yarns

A newsmaking aspect of the Atlantic City show was the big exhibit staged by the **Scragg Group,** Macclesfield, England, devoted to "Astralised Yarns." These are said to be produced by a new texturing process for the manufacture of stabilized, high bulk polyester and polyamide modified filament yarns. The major importance of the new process is that it permits, for the first time according to Scragg the commercial production of textured polyester yarns for use in knitted outerwear.

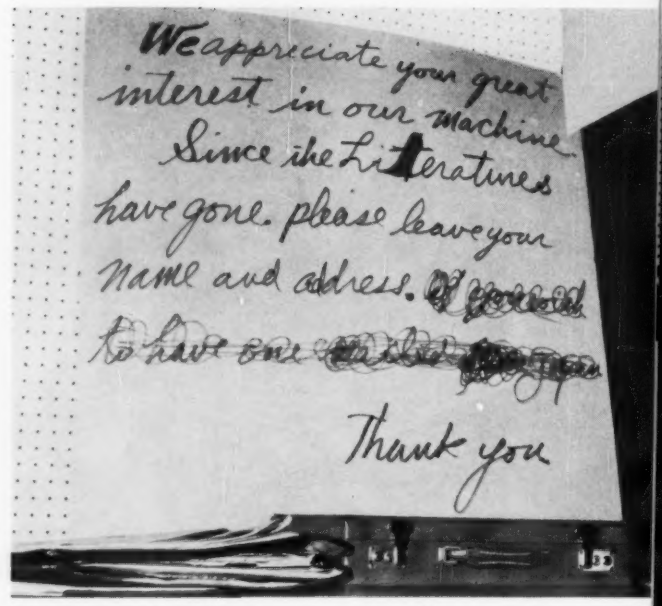
The process, exact details of which are disclosed only to licensees, utilizes an entirely new heat-setting technique and the yarn produced is said to have a high degree of uniformity of individual filament configuration, resulting in new standards of bulk and texture.



ELECTRONIC AGE—Electronic quality control equipment was much in evidence. This Rothschild electronic yarn tensiometer with recorder was displayed by Fabrionics, Inc.

Basic idea behind the new process, Scragg reports, is its ability to produce high bulk filament yarns with controlled density and volume by a continuous method of bulking. The process is able to confer on polyester and polyamide filament yarns a wide range of characteristics. These range from silk-like softness to any wanted degree of firmness or crisp texture. In knitwear, a special advantage of Astralised yarns is the fact that garments or fabrics do not require specialized finishing or thermosetting techniques.

Displayed in the Scragg exhibit were a wide range of fabrics and garments of both knitted and woven fabrics made with "Astralene-C", Scragg's trademark for polyester yarns made by the process, and "Astralon-C", the trademark for its modified polyamide yarns. These names denote yarns processed to quality specifications stipulated by the Scragg Group, the sole suppliers of machinery and equipment for yarns with these designations. It was emphasized by Scragg representatives at Atlantic City that the Scragg Group does not produce yarns, but promotes the specialized applications of textile machinery designed for high-quality yarn production. *For further information about this new development, readers are invited to write the editors.*



HONORABLE THANK YOU—Interest in the machinery on display was so intense that in some cases, exhibitors ran out of descriptive literature as this sign explains

Among new developments in electronic devices shown at Atlantic City, **Fabrionics Corp.** demonstrated its Rothschild F-Meter for measuring coefficients of friction. The instrument is said to provide fast accurate friction measurement for winding, twisting, spinning, beaming and knitting machines. By using the F-Meter with two Rothschild Electronic Tensiometers, it is possible to assure accurate tension control by dependable measurements of the coefficient of friction between yarn and yarn guide. Such measurement of yarn tension, Fabrionics states, permits maintenance of uniform yarn tension at any desired speed. This in turn means less down time for equipment, closer control of quality, and higher production.

New Jacquard Knitter

Wildman Jacquard Co. has developed a high production circular jacquard machine identified as the Model JSD-24. The machine is a yard goods machine, 30″ diameter with 24 jacquard feeds offering unlimited pattern scope with single needle control up to 14¼ needles per inch and double needle control over 14¼ needles per inch.

The machine can be equipped with 12 four color yarn changers. The dial is equipped with double butt needles and the dial cap camming has been arranged to permit the individual manual setting of the swing cams for knit, tuck or welt position. The dial cap has also been jig drilled to permit the rearrangement of both the back butt dial camming and the front butt dial camming. The cylinder camming arrangement also permits the manual setting the gate cams for knit, welt or tuck positions.

By setting up combinations of dial and cylinder cam arrangements in combination with the individual needle selection possibilites of the jacquard patterning device a virtually unlimited variety of designs can be made in twill back, pique, jersey, full rib, tuck and two, three or four color welt back fabrics. *For further information write the editors.*

AATT'S BOARD OF GOVERNORS—Present at the first meeting of the Board of Governors of the American Association for Textile Technology as established by the group's new constitution were: Standing, left to right: Roger J. Gentilhomme, George W. Wernz, J. Frederick Murray, Donald M. Goerg, Ajalon A. Tillery, Albert E. Johnson, A. H. McCollough, Erb N. Ditton, Gerard K. Lake. Sitting, left to right were: Arthur E. Jerome; John M. Holland, Fred H. Simmons, Giles E. Hopkins, Cameron A. Baker, Kurt J. Winter, Bernice S. Bronner. Members of the board not present are Genevieve M. Smith and Graham Richardson.

AATT Technical Council Set Up for First Time

The board of governors of the American Association of Textile Technology, Inc., under its new constitution, has appointed the Association's first technical council. Kurt J. Winter and Giles E. Hopkins, both textile consultants, have been named first chairman and alternate, respectively.

The duties of the council will be to investigate proposals for technical activities in AATT and to make recommendations for suitable action on such proposals; interpret for the membership technical developments of national importance, and any such other activities as may be within the interest of the Association.

Other members of the Technical Council are: Stanley Backer, Professor, Mechanical Engineering, Massachusetts Inst. of Technology, Cambridge, Mass.; Erb N. Ditton, Textile Consultant, New York; Ephraim Freedman, Director, Macy's Bureau of Standards, New York; Walter J. Hamburger, Director and Treasurer, Fabric Research Laboratories, Inc., Dedham, Mass.; Stephen J. Kennedy, Research Director, Quartermaster Corps, U. S. Army, Natick, Mass.; Richard T. Kropf, vice president, Belding Heminway Co., Inc., New York; Gerard K. Lake, vice presi-

(Continued on Page 71)

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For the DYER and FINISHER

New Fancourt Softeners

Two new softening agents are now being marketed by W. F. Fancourt Co. The firm's "Softener" can be used on any type and combination of fibers and is said to impart a full, soft hand with good body to piece goods, knits goods, stock or yarn, and is suitable for treating bleached, dyed or printed textiles.

The other new product, "Fanta Soft," is highly resistant to yellowing, remains ordorless regardless of the age of the fabric, and does not affect shade or light fastness of dyed fibers. It is a combination of a resin binder, micro pigments and a softening agent. *For further information write the editors.*

Dispersing Agents

Jacques Wolf & Co., a subsidiary of Nopco Chemical Co., has issued a new book on "Lomar Series of Dispersing Agents." The company reports they have been successfully applied in cement, rubber, textiles, wet milling, ceramics, gypsum board, paper pulp and printing operations. *For free copies of the book write the editors.*

New Procion Rubine Dye

Arnold, Hoffman & Co. Inc. has added Procion Rubine HBS to its range of reactive dyes. Developed by the Dyestuffs Division of Imperial Chemical Industries Ltd. and available in the U.S.A. only through Arnold, Hoffman, the new dye is said to mark a technical advance over existing reactive dyes of the hot dyeing type in the bluish-red category. It has improved solubility and building-up properties, and will largely replace Procion Rubine H2BS. *For further information write the editors.*

Ciba Reactive Yellow

Ciba Company's new Cibacron Yellow G, the latest addition to the Cibacron family, is reported by the producer to be the most versatile reactive yellow on the market. The new product builds up well in the exhaustion method and gives good yield in all pad applications as well as by the Thermofix method. A complete range of Kelly Greens is possible by combining Cibacron Yellow G and Cibacron Turquoise Blue G. *For further information write the editors.*

Fast Scarlet 2GS Base

Hiltonil Scarlet 2GS base is now available from The Hilton-Davis Chemical Co. division of Sterling Drug Inc., making it the fifth purified fast color base Hilton-Davis is offering. It previously introduced Hiltonil Scarlet GC and RC, Red KB and Garnet GBCP. The new fast color base is the sulfate of fast scarlet 2G base. It has been demonstrated that the sulfate is easier to diazotize. It is standardized to one-half the strength of the fast scarlet 2G base. The new product is dispersible, for rapid wetouts, and dustless for ease of handling. *For further information write the editors.*

New Fast Color Salts

New products available from Farbwerke Hoechst AG., West Germany, include Fast Grey Salt G and Fast Grey Salt B, according to Carbic-Hoechst Corp., distributors. The new products are fast color salts which produce with naphtols fast to light, dischargeable gray shades of good fastness to washing, including chlorine. Hoechst also is making Fast Blue Salt OT which contains a new buffer system and eliminates any additions to the developing bath. *For further information write the editors.*

Geigy's Reactive Dyes

Reactone, the new line of highly concentrated reactive dyes recently introduced by the Dyestuffs Division of Geigy Chemical Corp., is

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Customer Service Program

A stepped-up program of customer services for 1960 was outlined at a recent Althouse Chemical Co. sales meeting. Felix Buskey, executive vice president, said Althouse is extending its work with synthetic fibers through its Research Applications Center and is adding facilities for new high-temperature and high-pressure dyeing. The firm will continue to service the dyeing industry by developing new processes to help manufacturers meet quality dyeing requirements for the many new synthetic fibers. In 1959, the Althouse center dyed 30,000 samples for customers. Althouse, which manufactures dyestuffs and chemicals, is a subsidiary of Crompton & Knowles Corp. *For further information write the editors.*

Du Pont Solvent

"Freon"-TF solvent works effectively and much more safely than carbon tetrachloride, in Soxhlet extractors used in the textile industry to remove oils and greases from both natural and synthetic fibers, according to Du Pont chemists. The new solvent's major advantage is said to be its relative freedom from inhalation toxicity. Continuous Soxhlet extraction runs can be made without providing special vapor exhaust systems recommended for handling the much more toxic carbon tetrachloride. *For further information write the editors.*

Onyx Anti-Static Agent

Aston 123, a new durable antistatic agent, is being marketed by Onyx Oil & Chemical Co. Aston 123 requires no complicated processing and uses normal equipment found in most finishing plants. It is applied by cross-linking with Eponite 100, manufactured by Shell Chemical Co. The combination is applied by padding; normal drying is all that is necessary in order to achieve durability. The Textile Fibers Division of Du Pont has applied for patent application of the combination of the two chemicals as applied to yarn, staple and tow and fabrics. *For further information write the editors*

New Leveling Agent

Deeper, level and solidly dyed shades on wool and nylon stocks, yarns or fabrics can now be obtained economically with neutral dyes by using Calco Leveling Salt LV, a new agent developed by American Cyanamid Co. The agent is applied with the dye under processing conditions, pH 4-6, that should be used for neutral dyes. Wool's soft hand is said to be retained while the striped effect encountered in dyeing nylon carpeting is eliminated. The new product also is expected to solve similar problems in dyeing nylon hosiery and sweaters. *For further information write the editors.*

Reactive Acrylic Latex

B. F. Goodrich Chemical Co. has started production of Hycar 2671, a new basic material for use as a finishing agent in textiles and other industries. The new material, a reactive acrylic latex, has proven useful as a backing for upholstery and drapery fabrics, binder for nonwoven fabrics, and as an adhesive or laminating agent. Textile manufacturers using the new latex need only adjust its viscosity to back-coat a wide range of fabrics to obtain such properties as wash fastness, dry-cleanability, good hand and resistance to discoloration. *For further information write the editors.*

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ALLEN MODEL "G", the modern warper with PATENTED HYDRAULIC CONTROL, gives you . . .

Uniform Density of Warp throughout entire build-up.

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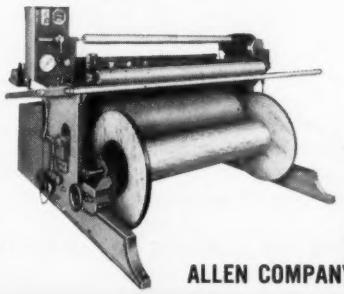

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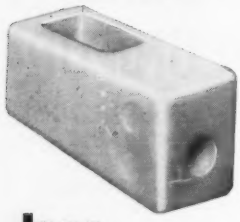

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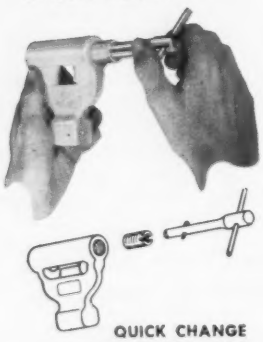

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TEXTILE — NEWS BRIEFS

New Polyolefin Fiber

A new polyolefin fiber will be marketed soon by Canadian Celanese Ltd., Montreal, Canada, under the registered trademark Propylon. The new product is described as lighter in weight than other manmade fibers. C. W. Palmer, Canadian Celanese president, said it also possesses high strength and good resistance to abrasion and is unaffected by water or most common chemicals.

Package-Dyed Crimped Yarn

Joseph Bancroft & Sons Co., owners of the Ban-Lon and Textralized trademarks, has developed a new machine, known as the model 88 or core crimper, to produce package-dyed crimped yarn. Bancroft reported the machine not only makes possible the package-dyeing of crimped yarn, but it also will maintain high bulk level and presents the possibility of crimping a much wider variety of fibers and filaments. The model 88 crimpers are now being subjected to in-plant commercial application on a field-test basis.

New Polypropylene Fiber

Royalene UF, a polypropylene fiber that resists the effects of sunlight, has been developed by United States Rubber Co. The fiber, developed chiefly for outdoor furniture webbing, has been made part of the company's line of synthetic fibers known as Royalene, produced by the footwear and general products division. Sun tests indicate good performance of the fiber for a period of more than four years, twice the sun life of comparable polypropylenes, according to the company. *For further information write the editors.*

Solution-Dyed Polyesters

Two companies have announced production of polyester fiber in solution-dyed black. Eastman Chemical Products said its solution-dyed black Kodel makes possible a whole new range of styling possibilities for polyester blends. The Eastman product is now being produced in 2.25, 3 and 4.5 per-denier-filament staple, plus tow, at $1.79 a pound.

Beaunit Mills, also is producing Vycron solution-dyed black polyester fiber, in 1½ denier at $1.36 a pound and 3 denier staple at $1.46 a pound, for immediate delivery.

New Spinning Mill

Production is now under way at Federal Spinning Corp.'s new, $1,000,000 long fiber knitting yarn plant in Sanford, N. C., it was announced by Bennet M. Berman, president of the new company and of its parent concern, Federal Yarn Corp. The principal product at the mill will be knitting yarns of Du-Pont Orlon and other long fiber synthetics plus blends with wool and worsted and all worsted. Yearly output is expected to be 2 to 2½ million pounds annually.

Textile School Degree

Beginning in the fall quarter 1960, the A. French Textile School of the Georgia Institute of Technology, Atlanta, Ga., will offer a new degree, Bachelor of Science in Textile Chemistry. Up until this time, students majoring in manufacturing or management and those majoring in textile chemistry and dyeing, both received a Bachelor of Science in Textiles degree. These two operations in the B.S. degree program have been separated and two different degrees, one in Textiles and one in Textile Chemistry, are to be offered. The Bachelor of Textile Engineering degree program is not affected by this change.

Nylon Air Shelter

An air-inflated nylon shelter to cover building sites for $23,000 to $35,000 homes being constructed by Robert Brown in the Cleveland area, helps the builder maintain his construction schedule, a home every 21 days. 100 feet long, 50 feet wide, and 25 feet high, and weighing only 1,200 pounds, the air house completely covers the home being built underneath, shielding it and workers from all types of adverse weather which normally would delay construction activities. The air-structure was designed and built by Domestic Film Products Co., Millersburg, Ohio.

Allied Site Chosen

Allied Chemical Corp. recently announced that Chesterfield, Va., will be the site for a portion of the firm's planned nylon expansion. Facilities for making Caprolan heavy denier nylon for industrial uses are located at Chesterfield. Allied's National Aniline Division president James G. Fox, Jr., reported that engineering studies for the new plants are approaching completion and that initial fine denier operations are expected by the 1961 second quarter. Technical assistance and certain machinery will be supplied by Snia Viscosa, Milan, Italy.

(Continued on Page 71)

For exciting new possibilities

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package dyed by Globe

Knits take on an exciting new concept of texture and surface when made from easy-care Arnel-Cotton blends—package-dyed in fresh, new, sparkling colors by Globe.

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Level Wool Dyeing

(Continued from Page 34)

a case of high temperature changing the shade of the dye, but actually a yellowing of the wool. This yellowing on one side by excessive heat can be the equivalent of adding .01 or .02% of yellow dye. Any dyer knows that this amount of dye can radically change the results on a light shade. Therefore, we must not overlook the need for thorough control and proper maintenance of the dryer.

Effect of Uneven Extraction

In another mill having shadiness on one side we traced the unevenness to uneven drying. But in this case the trouble was not in the dryer, but the uneven moisture content of the cloth before it went into the dryer. In their system of removing water after dyeing, the cloth passed through squeeze rolls which removed the excess moisture; then over a vacuum slot which brought the moisture content well down. However, in this case the well-extracted goods did not go directly to the dryer but laid in a truck for many hours before drying.

Here again, they came off the extractor into a center wheel-type truck in such a way that they were piled unevenly and as a result, they tipped downward on one end about six inches. As a result, the residual water migrated so much during the ensuing hours that when they finally went into the dryer, one side had approximately twice as much moisture as the other. On leaving the dryer, one side was overdried and the other a bit toward the damp side. As moisture content does influence color and degree of drying, you can understand why the pieces were shaded side to side. Here again, we emphasize the importance of 100% cooperation between the dyer and those concerned with finishing before and after dyeing.

Charges Discrimination

The American Cotton Manufacturers Institute has filed charges with the Senate Commerce Committee that foreign nations are discriminating against American textile products, chiefly by special import taxes. In a statement filed by the association's chief economist, Dr. R. Buford Brandis, the Senate committee was told that overseas shipments of U.S. cotton textiles in 1959, a year of almost worldwide economic improvement, were smaller than in 1958 when many countries, including the U.S., were afflicted by a general recession in trade.

U.S. cotton textile exports in 1959 fell to a postwar low of 472.6 million square yards, Brandis said, with such exports "now about on a par with those of 1913." He said that exports of manmade fibers and products were 217.7 million pounds in 1959, up 17% from 1958, while imports of similar items at 166.2 million pounds were up 49%.

PTI Honorary Degrees

Eighty-one students from the U. S. and abroad were awarded degrees at the 76th commencement exercises of the Philadelphia Textile Institute, Germantown, Pa., on June 4. Recipients of honorary degrees were: Michael Daroff, H. Daroff and Sons, Inc., Doctor of Textiles; Professor Thomas Edamn, head of the PTI Knitting Department, Doctor of Textile Science; William R. Hockenberry, director of the Evening and Extension Schools, University of Pennsylvania, Doctor of Laws, and Merwin R. Haskel, president, United Merchants and Manufacturers, Inc., Doctor of Laws.

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in June 1960. All prices are given as subject to change without notice.

CELLULOSIC YARNS

ACETATE

American Viscose Corp.

Current Prices Effective March 22, 1960

Bright and Dull

Denier & Filaments	Intermediate Twist** Twister Cones	Twister T-Tubes	Warps	Spinning Twist Cones & C-Tubes	Warps
40/11	$	$	$	$	$1.14
45/14	....	....	....	....	1.03
55/14-20	.99	.97	1.00	.93	.87*
75/18	....	....	....	....	.90
75/20	.95	.93	.96	.89	.90
100/28	.91	.89	.92	.85	.86
120/32	.82	.80	.83	.76	.77
150/36	....	....	....	....	.70
150/41	.74	.73	.75	.69	.70
200/54	.70	.69	.71	.66	.67
240/80	....	....	....	.65	.66
300/80	.66	.65	.67	.62	.63

* Tricot Spools Only.
** Standard Twist 2¢ Additional.
Terms: Net 30 Days.

Celanese Fibers Company

Current Prices Effective March 22, 1960

Acetate Filament Yarn Prices

Bright and Dull

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	4-Pound Cheeses	Spinning Twist Cones	Beams	O Twist Tubes
45/13	$1.12	$1.13	$	$	$1.03*	$ ....
55/15	.99	1.00	....	....	.87*	.82
75/20	.95	.96	....	.89	.90	.68
75/50	.97	.98	....	....	.92	....
100/26-40	.91	.92	....	.85	.86	....
120/40	.82	.83	....	.76	.77	....
150/40	.74	.75	.74	.69	.70	....
200/52	.70	.71	....	.66	.67	....
240/80	.68	....	....	.64	....	....
300/80	.66	.67	....	.62	.63	....
450/120	.66	.67	....	.62	.63	....
600/160	.65	.66	....	....	....	....
900/80-240	.63	.64	....	....	....	....

* Tricot beams only. This item with Permachem—$.05 additional.
3T/10 electrical finish available at no premium.

3 to 5 turns on Cones or Beams	$.02 Additional
Over 5 turns	$.03 Additional per Turn
150 Denier 12-TM Tubes	$.73
3 Pound Cheeses	$.01 Less than 4-lb. Cheeses
2-BU and 4-BU Tubes	Same price as 4 & 6-lb. cones
Premium for Serving Tubes	$.05
Part Cone Premiums: 2-lbs.	$.05
1-lb.	$.10
Under 1-lb.	$.20

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
*150/40	1.11	1.12	1.06	1.07
200/104	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/240	.94	....	....	....

* 150/2Z/40 available in all colors. Contact our District Sales Representative for current availability of colors in other denier.

3 to 5 Turns on Cones or Beams	— $.02 Additional
Over 5 Turns	— $.03 Additional per Turn

Celaperm Black Yarn Prices

Effective March 22, 1960

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices

"Acele"* Acetate

Bright & Dull

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Bms.
40-13	$1.06	$1.13						
45-13	.94	1.02		$1.11				
55-18	.82	.86		.91***			$.99	$1.00
55-24	.82	.86		.91			.99	1.00
75-24	.86***	.89		.90		$.93	.95	.96
75-50				.92		.95	.97	.98
100-32	.82***	.85		.86		.89	.91	.91
120-50	.73	.76		.77		.81	.82	.83
150-40	.66	.69	$.69	.70	.74	.74	.74	.75
200-60/64	.65		.66	.67	.70	.70	.70	.71
240-80			.65				.69	
300-80	.60	.62	.62	.63	.66	.66	.66	.67
450-120	.61		.62	.63	.66	.66	.66	.67
600-160			.62		.65		.65	.66
900-44					.63		.63	.64
900-240	.61**				.63		.63	.64
1800-88					.61		.61	.62
2700-132					.61		.61	.62
3000-210					.61		.61	.62

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Intermediate Twist Price.
(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.
** Bright only 2" Tubes.
*** Tricot only.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist Twisted Tubes 2 Lb.	4 & 6 Lb.	Cones	Beams
55-18	$1.245	$1.315***			$1.35	$1.35	$1.37	$1.38
75-24	1.18	1.28		1.29	1.32	1.32	1.34	1.35
100-32	1.14			1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.10	1.11	1.11	1.12
200-64					1.04	1.05	1.05	1.06
300-80	.95	.97		.98	1.00	1.01	1.01	1.02

(A) Regular Twist—Add $.02 to Intermediate Twist Price.
*** Tricot only.

Black

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Beams
40-13	$1.215	$1.285						
55-18	1.045					$1.15	$1.17	$1.18
75-24	.98	1.08		$1.09		1.12	1.14	1.15
100-32	.94			1.03		1.06	1.08	1.09
150-40	.83	.86	.86	.87		.91	.91	.92
200-60						.85	.85	.86
300-80	.75	.77	.77	.78	.81	.81	.81	.82
450-120					.79	.79	.79	.80
600-160					.77	.77	.77	.78
900-240, 44					.74	.74	.74	.75

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Int. Twist Price.
(B) 1 lb. ⅝" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Specialty Yarns

Type 20	Same Price as Regular Yarn
Type C	Same Price as Regular Yarn

Thick & Thin

Denier & Filament	Natural Cones	Beams	Black Cones	Beams	Color-Sealed Cones
200-64 Int. Twist	$1.05	$	$1.15	$	$1.35
200-64 Reg. Twist	1.08	1.09	1.17	1.21	....

Terms: Net 30 days. Subject to changes without notice.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
* Dupont's Trademark for its acetate yarn.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.
Current

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Beams	Intermediate Twist Cones	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Zero Twist
55/13	$1.01	$1.02	$0.99	$1.00	$0.93	$0.94	$0.82	$0.87	$0.86
75/19	.97	.98	.95	.96	.89	.90	....	.90	....
75/49	.99	1.00	.97	.98	....	....	....	....	....
100/25	.93	.94	.91	.92	.85	.86	....	....	....
120/30	.84	.85	.82	.83	.76	.77	....	....	....
150/38	.76	.77	.74	.75	.69	.70	.66	....	....
200/50	.72	.73	.70	.71	.66	.67	....	....	....
300/75	.68	.69	.66	.67	.62	.63	.60	....	....
450/114	.68	.69	.66	.67	.62	.63	....	....	....
600/156	.67	.68	.65	.66	.62	.63	....	....	....
900/230	.65	.66	.63	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist		Intermediate Twist		Low Twist	
	Cones	Beams	Cones	Beams	Cones	Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist	Intermediate Twist		Low Twist
	Cones	Cones	Beams	Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.
Prices on special items quoted on request.
Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in continental United States except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.
* "Estron" is a trade-mark of the Eastman Kodak Company.
* Chromspun is a trade-mark of the Eastman Kodak Company.

RAYON

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* Skeins & Cones	High Turn Skeins & Cones			
			8½ Turns	12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.29	1.55	....	....	....	1.85
65/45	1.22	1.38	....	$1.61	....	1.66
75/60**	1.11	1.25	....	1.48	$1.53	1.56
100/74**	1.02	1.15	....	1.40	1.45	1.51
125/60	1.01	1.12	$1.16	1.37	....	....
150/120	.99	1.08	1.18	1.33	....	....
300/225	....	1.01	....	....	1.14	....
900/744	....	.91	....	....	....	....
1800/744	....	.91	....	....	....	....

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.05	1.05	....	....	....	....	....
65/45	1.13	....	....	....	....	$1.50	....
75/45*	1.04	....	$1.15	$1.15	$1.38	1.38	$1.46
100/60*	.96	....	1.10	1.10	1.30	1.30	1.38
125/60	.91	....	1.06	1.06	....	....	....
150/90*	.83	....	.87	.87	1.21	1.21	1.30
150/120	.87	....	....	.99	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

Den/Fil	No Turn Cones	5 Turn Cones	5 Turn Beams	12 Turn Cones	15 Turn Cones
50/36	$1.60	$1.85	$1.85	....	....
75/45	1.48	1.58	1.58	1.78	1.88
100/60	1.38	1.48	1.48	1.68	1.78
150/90	1.21	1.28	1.28	1.63	1.73
300/120	1.21	1.28	....	....	....

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.50	$1.40
1519**	155/90	....	....	1.50	1.40
2008	200/120	....	....	1.11	1.01
3002	315/180	$1.15	$1.05	....	....
4011	410/224	1.15	1.05	....	....
6001	600/360	1.13	1.03	....	....
8001	860/450	1.13	1.03	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.
** Code 1519 can be run in warp or filling.

CUPIONI Type B

Code	Den/Fil	2½ Turn Cones
9650	70/45	$1.69
9660	100/60	1.53
1545	150/90	1.30
9730	285/135	1.15
9792	450/225	1.15
9814	600/372	1.12
9837	940/372	1.02

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black Comes in all deniers."

STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9747	275/225	3½	$1.25
9798	450/372	2½	1.15
9823	600/372	2½	1.10
9847	960/372	2½	1.02
9885	1290/372	1½	1.00
9934	2680/744	1½	1.00

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Turned Cones	Price
9699	150/148	2½	$1.35
9769	300/224	2½	1.25
9782	450/270	2½	1.05
9809	600/360	2½	1.05
9840	900/450	2½	1.00
9924	2000/744	2½	.95

"Spun Dyed Cupracolor Black 35¢ per pound extra."
Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.
Prices are subject to change without notice.

American Enka Corp.

Current Prices
Effective February 29, 1960
Standard Quality Yarns

NATURAL

Den./Fil.	Luster	Turns		Weaving Cones	Weaving Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5	S	....	....	....	....	....	1.63
50/20	B	4	S&Z	....	....	....	....	1.52	1.64
75/10	B	3	S&Z	....	....	....	....	1.02	....
75/18	E	4	S	....	....	....	....	....	1.14
75/30	B	2.5,4	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/30	B	8	S	1.24	....	1.49	1.59	1.12	1.24
75/45	P,E	2.5,4,5	S&Z	1.14	1.14	1.32	1.41	1.02	1.14
75/60	B,P	3,4	Z	1.16	....	....	....	1.04	....
100/14	B	3	S&Z	....	....	1.15	1.23	.90	....
100/40	B,E	12	S&Z	....	....	....	....	....	1.29
100/40	B,P,E	4,5	S&Z	....	.98	....	....	.90	.98
100/40	B	6	S	1.17	....	1.34	1.44	1.09	....
100/40	B,P	2.5,4	S&Z	.98	.98	1.15	1.23	.90	....
100/60	B	4	S&Z	....	....	....	....	.90	....
100/60	E	2.5	S	1.00	1.00	....	....	.92	....
125/40	E	3	Z	....	....	....	....	.87	.90
125/50	B,P	3	S	.96	.96	....	....	....	....
150/40	B,E	0		.745	....	....	....	....	....
150/40	B,P,E	2.1,3	S&Z	.82	.82	.96	1.03	.78	.82
150/40	B,E	5	S&Z	.90	.90	1.15	1.25	.86	....
150/40	B,E	8	S&Z	.95	.95	1.20	1.30	.91	....
150/90	E	2.1	S&Z	.83	.83	....	....	.79	....
200/40	B	2.1	S	.81	.81	.94	1.01	.77	....
200/40	P	3	Z	....	....	.94	1.01	.77	.81
250/60	P,E	2.4	Z	....	....	.93	1.00	.77	.80
300/30	E	3	S	.81	.85	....	....	....	....
300/40	B	3.2	Z	.73	.76	....	....	....	....
300/50	B,E	3	S	.73	.76	....	....	....	....
300/60,120	B,P,E	2.1	S&Z	.73	.73	.82	.89	.71	.73
300/60	B	3.5	S	.73	.73	.82	.89	.71	....
300/60	B	6	S	.86	.86	....	1.00	.84	....
300/60	B	8	S	.88	.88	....	....	.86	....
300/120H.T.	B	2.5	S	.75	.75	....	....	.73	....
300/40H.T.	B	3	Z	.85	....	....	....	.83	....
450/60	B	3	S	.69	.71	....	....	.67	....
450/80	B,E	3	S	.69	.71	.78	.85	.67	....
600/80	B,E	3	S	.73	.75	....	....	....	....
600/120	B,E	3	S	.69	.71	.78	.85	.67	....
900/120	B	3.4	S	.69	.71	.78	.85	.67	....
900/120H.T.	B	3.4	S	.71	.71	....	....	.69	....

B = Briglo
P = Periglo (Semi-Dull)
E = Englo (Dull)
H.T. = High Tenacity

Jetspun® (Colored Yarns)

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams	Colors
100/40	Regular	2.5S	$1.35	$1.35	All
150/40	Regular	2.1S	1.17	1.17	All
200/40	Regular	8.3S	1.28	1.28	All
300/40	Regular	3.4S	1.09	1.09	All
300/120	Regular	2.1S	1.09	1.09	All
450/80	Regular	3.0S	1.05	1.05	All
600/80	Regular	3.4S	1.04	1.04	All
300/40	High	3.4S	1.11	1.11	All
600/80	High	3.4S	1.07	1.07	All
900/120	High	3.4S	1.06	1.06	All

® Registered Trade Mark for American Enka Solution-dyed Rayon Yarn.

Skyloft (Lofted Rayon Filament Yarns) Natural and Jetspun®

Denier	Denier per Filament	Twist	Cones or Tubes Natural	Black	Other Colors
1000	7.5	3.5S	$.92	$1.17	$1.17
2200	15	3.5S&Z	.67	.77	.84
2700	15	3.5S&Z	.67	.77	.84
4300	15	3.0S&Z	.66	.76	.83
5300	15	3.0S&Z	.65	.75	.82

American Viscose Corp.

Effective October 13, 1959

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	Cones Tubes	Beams Spools	Cakes
			Regular Turns				
75	10-30	Bright	$1.41	$1.32	$1.14	$1.14	$1.02
75	30	Dull			1.14	1.14	1.02
100	14-40	Bright	1.23	1.15	.98	.98	.90
100	60	Dull			1.00	1.00	.92
150	24-40	Bright	1.03	.96	.82	.82	.78
150	40	Semi-Dull	1.03	.96	.82	.82	.78

150	40	Dull	....	....	.82	.82	.78
150	90	Dull	....	....	.83	....	.79
200	10-44	Bright	1.01	.94	.81	.81	.77
250	60	Semi-Dull & Dull	1.00	.93	.80	.80	.77
300	15	Bright	....	.85	.78	.78	....
300	30	Dull Flat Filament	....	....	....	.85	....
300	44	Bright & Dull	.89	.82	.73	.73	.71
300	234	Dull	....	....	.83	....	.81
450	60-100	Bright	....	.78	.69	.71	.67
600	100	Bright & Dull	....	.78	.69	.71	.67
900	50-100-150	Bright	....	.78	.69	.71	.67
1200	75	Bright	....	.78	.69	.71	....
2700	150	Bright	....	.78	.69	.71	....

Extra Turns Per Inch

150	40	Bright	6-Turns	$1.25	$1.15	$ .90	$ .90	$ .88
200	44	Bright	6-Turns	....	1.05	.96	.96	....
300	15	Bright	5-Turns	....	....	.86	.86	....
300	44	Bright	4.3-Turns	....	....	.81	....	.79
300	44	Bright	6-Turns	.97	.90	.86	.86	.84
300	120	Rayflex	6-Turns	....	....	.93	.93	....
600	30	Bright	5-Turns	....	.86	.82	.82	.80

Rayflex Yarns

150	40-60	Rayflex	$	$	$ .85	$ .85	$ .81
200	75	Rayflex	....	....	.84	.84	.80
300	60-120	Rayflex	....	....	.75	.75	.73
450	120	Rayflex	....	....	.71	.71	.69
600	234	Rayflex	....	....	.71	.71	.69
900	350	Rayflex	....	.80	.71	.71	.69

Thick & Thin Yarns

150	40-90	Bright & Dull	$	$	$1.18	$	$ ....
200	75	Bright & Dull	....	....	1.08	....	....
300	120	Bright & Dull	....	....	.98	....	....
450	100	Bright & Dull	....	....	.92	....	....
490	120	Bright & Dull	....	....	.98	....	....
900	350	Dull	....	....	1.03	....	....
920	120	Bright & Dull	....	....	1.03	....	....

Colorspun Yarns

Denier	Type	Cones/Tubes Beams/Spools
75	Regular Strength	$1.71
100	Regular Strength	1.35
150	Regular Strength	1.17
200	Regular Strength	1.14
300	Regular Strength	1.09
450	Regular Strength	1.05
600	Regular Strength	1.05
900	Regular Strength	1.05
300	High Strength	1.11
450	High Strength	1.06
900	High Strength	1.06
300	Regular Strength 5-Turns	1.19

Avicron Yarns

Avicron Yarns

Denier	Filament		Cones/Tubes Beams/Spools
1800	100-200	Singles & 2 Ply	$.61
2700	150-300-980	Singles & 2 Ply	.58
2700	980	Singles 5 TPI	.61

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.

Celanese Fibers Company

Effective June 24, 1959

Viscose Rayon Filament Yarn Prices—Bright and Dull

Denier/Fil/Twist		Beams	Cones	Cakes
75/30/3			1.10	.98
100/40/2Z		.97		
100/40/3			.96	.88
100/40/5			1.02	
100/60/2Z	NS		.96	
100/60/3			.98	.90
125/40/2Z		.93		
125/40/3			.94	.85
150/40/0	NS		.74½	
150/40/2Z		.81		
150/40/3			.79½	.76
150/40/5			.90	.86
150/40/8			.95	.91
150/90/0	NS		.77½	
250/60/0	NS		.74	
250/60/3			.80	.77
300/50/0	NS		.70	
300/50/2Z		.72		
300/50/3			.70½	.69
450/120/0	NS		.67	

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U. S. A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective with orders June 24, 1959

Bright and Dull

Den.	Fil.	Turns/Inch Up to		Beams	Cones (A) Tubes	Cakes
40	20	3	Textile "Cordura"*		$1.97	$1.92
50	20	3			1.70	
50	20	3	Textile "Cordura"		1.72	1.67
50	35	3	Textile "Cordura"		1.77	
75	10	3	Bright			1.02
75	30	3		$1.14	1.14	1.02
100	40	3	Bright	.98	.98	.90
100	60	3	Dull		1.00	.92
125	50	3		.96	.96	.87
150	40	3		.82	.82	.78
150	60	3	Bright	.82	.82	.78
150	60	3	Textile "Cordura"		.875	.845
150	90	3	Dull		.83	
150	100	3	Dull		.83	
300	50	2.5		.73	.73	.71
300	120	3	Textile "Cordura"	.74	.74	.72
450	72	3		.71	.69	.67
600	96	3	Bright	.71	.69	.67
600	240	3	Textile "Cordura"	.72	.70	
900	50	3	Bright	.71	.69	.67
900	144	3	Bright	.71	.69	.67
1165	480	3	Textile "Cordura"	.72	.70	.68
1800	100	3	Bright		.69	
2700	150	3	Bright	.71	.69	

Thick and Thin

100	40	3	#7 Bright		1.42	
150	90	3	#7 Bright		1.08	
200	80	3	#7 Bright		1.08	
450	100	3	#7 Bright		.92	
1100	240	3	#60 Bright		1.03	
2200	480	3	#60 Bright		.98	

Monofils

150	1	3	Bright	1.35	1.35	
300	1	3	Bright	1.15	1.10	
600	1	3	Bright		1.00	

Plush

300	30	3	Dull	.85	.81	

(A) 2¢/lb. additional for cones less than 3#.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

• "CORDURA" and "SUPER CORDURA" are Du Pont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective June 29, 1959

Continuous Process Textile Yarns

Denier	Filament	Turns per In.	Type	Beams	2.8# Cones	4.4# Cones and Tubes
150	40	2.5"S"	Bright	.82	.82	
200	20	2.5"S"	Bright	.81	.81	
300	44	2.5"S"	Bright	.73	.73	
450	60	2.0"S"	Bright	.69		.69
600	90	1.5"S"	Bright	.69		.69
900	50	2.0"S"	Bright	.69		.69
900	150	2.0"S"	Bright	.69		.69
1100	480	2.0"Z"	Bright extra strong	.66		.66

Lustre #4 is semi-dull.

Prices are subject to change without notice.

Strawn Monofilament

Denier	Filament	Turns per In.	Type	4.4# Cones	Spools and Tubes
450	1	0	Bright and Dull	1.00	1.05
450	1	2	Bright and Dull	1.00	1.05
1250	1	0	Bright and Dull	1.00	1.05
1250	1	2	Bright and Dull	1.00	1.05

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in continental United States except Alaska.

Prices are subject to change without notice.

North American Rayon Corp.

Current Prices

Denier/Filament	Twist	Knitting* Cones	No Twist Knitting Cones	Weaving Cones, Velvet Cones, Beams, Tubes**	Untreated Cakes
Normal Strength Yarns — NARCO					
75/30	3.5			1.14	1.02
75/30	7			1.27	
75/30	12			1.35	
75/30	15			1.37	
75/30	20			1.40	
100/40/60	3.5			.98	.90
100/40	12			1.22	
125/25/60	3			.96	.87

150/42	0		.74½		
150/42/60	3	.80½		.82	.78
300/75	0		.71		
300/75	3	.73		.73	.71
900/46	2.5	.69		.69	
1800/92	2.5	.69		.69	

* Oiled Cones $.01 per pound extra for Graded Yarns only.
** 1 lb. Tubes $.02 per pound extra for Graded Yarns only.

Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.

Prices subject to change without notice.

TRIACETATE

Celanese Fibers Company

Current Prices

Arnel Yarn Prices
Bright & Dull

Effective August 19, 1958

Denier and Filaments	Cones	Beams	Thick and Thin Cones
55/WKZ/15	$	$1.16	$ ....
55/2Z/15	1.32	1.33	....
75/WKZ/20	....	1.16	....
75/2Z/20	1.21	1.22	....
100/2Z/26	1.14	1.15	....
150/2Z/40	.95	.96	....
200/2Z/40	....	....	....
200/2Z/52	.92	.93	1.25
300/2Z/80	.87	.88	1.23
450/2Z/120	.86	.87	....
600/2Z/160	.85	.86	1.21

3 to 5 Turns on Cones or Beams—$.02 Additional
Premium for Black Arnel—$.25 Per Pound
Premium for Navy Arnel—$.37 Per Pound

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

CELLULOSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective December 23, 1959

Industrial Yarn Prices

Prices Subject to Change Without Notice

	Denier/Filament	Standard
TYREX (ENKA II and III)	1100/720	.57
	1650/1100	.50
	2200/1440	.49
	*3300/2160	.49
TYREX FABRIC (ENKA II and III)	1100/720	.69
	1650/1100	.59
	2200/1440	.58
SUPRENKA M	1230/720	.57
	1800/1100	.50
	1825/1100	.50
	2200/1440	.49
	*3300/2160	.49
TEMPRA	1100/480	.56
	1130/480 (5.0Z Twist)	.60
	1230/480	.56
	1230/480 (5.0Z Twist)	.60
	1650/720	.49
	1820/720	.49
High or Low Elongation	2200/960	.48
	2400/960	.48
TEMPRA—SEWING YARN	1230/480	.60
	1750/720	.52
	1820/720	.51
HIGH TENACITY	300/120	.75
	900/120	.71
REGULAR TENACITY	100/40	.98

* Currently available only in Enka III.

Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland, Tennessee; minimum freight allowed to first destination east of the Mississippi River. * Tyrex certified viscose yarn.

American Viscose Corp.

Effective Dec. 23, 1959

Tyrex*
Tyrex* Viscose Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	980	0	.57	.57
1100	980	Z	.57	....
1650	1500	0	.50	.50
1650	1500	Z	.50	....

Tire Fabric Made with Tyrex* Viscose Tire Yarn and Cord

Denier	Filament	Carcass	Top Ply	Breaker
1100	980/2	.69	.69	.69
		Factor Open-525	300-490	115-275
1650	1500/2	.59	.60	.625

Factor determined by dividing total ends by picks.

* Tyrex is a collective trade-mark of Tyrex Inc. for Viscose Tire Yarn and Cord.

Rayon Tire Yarn
Yarn

Denier	Filament	Twist	High Strength (Unslashed)	High Strength	Super "Rayflex" 210-310	Super "Rayflex" 120-220-320
1100	490	0-Z	....	.56	....	....
1100	980	0-Z	....	....	....	.57
1150	490	Z	.56	....	....	....
1230	490	Z	.56	....	....	....
1650	980	Z	.49	.49	.49	....
1650	980	0	....	.49	....	....
1650	1500	Z	....	....	....	.50
1650	1500	0	....	....	....	.50
1875	980	Z	.49	....	.49	.50
2200	980	0	....	.48	....	....
2200	1500	0	....	....	....	.49
3300	3000	0	....	....	....	.49
4400	3000	0	....	....	....	.49

High Strength available on cones—tubes—beams.

High Strength and Super "Rayflex"

0 Twist—available on 10# cones—beams—10# tubes.
Z Twist—available on beams.

Avisco Bag Twine

Sold by The American Thread Company

1100/980 Super "Rayflex"	0-Z	Cones	.62
1500/980 Super "Rayflex"	0-Z	Cones	.59
1780/980 Super "Rayflex"	0-Z	Cones	.55

Also available in red at .07 premium.

Chafer Yarn

1100/490 High Strength	5Z	Twist	.60

All yarns sold "Not Guaranteed for Dyeing".

Tire Fabric

Denier	Filament	Type	Carcass	Top Ply	Breaker
1100	980	Super 120-220-320	.69	.69	.69
			Factor* Open-525	300-490	115-275
1650	980	Super 110-210-310	.58	.59	.615
1650	1500	Super 120-220-320	.59	.60	.625

* Factor determined by dividing total ends by picks.

Cord on cones in regular Tire Yarn twists same as fabric prices.

Other twist combinations—prices quoted on request.

When supplied, yarns and cords in special packages take premiums indicated.

10.5 oz Wardwell Tubes	.10
1.5 lb Regular Braider Tubes	.06
3.5 lb Tubes	.045

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect.

Rayon Tire Yarn and Fabric

Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of the Mississippi River, in which event the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same.

Price subject to change without notice.

Celanese Fibers Company

Effective December 27, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
300/280	3Z	$2.20			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	3Z	$1.40			
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	2½Z	$1.30			
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

News

(Continued from Page 65)

Fred L. Sharpe, Jr., has been appointed vice president and director of sales of Heresite & Chemical Co., Manitowoc, Wis. He was formerly general manager of General Coating Inc., a wholly owned subsidiary of Heresite.

Dr. N. Benninga

Dr. Noach Benninga has been named director of processes for American Enka Corp., succeeding **J. D. W. Hubbeling,** retired.

J. G. Staudt

John G. Staudt has been named president of The Dobeckmun Co., division of the Dow Chemical Co., succeeding **Thomas F. Dolan,** founder of Dobeckmun. Mr. Dolan will continue to serve actively as chairman of the company's executive committee.

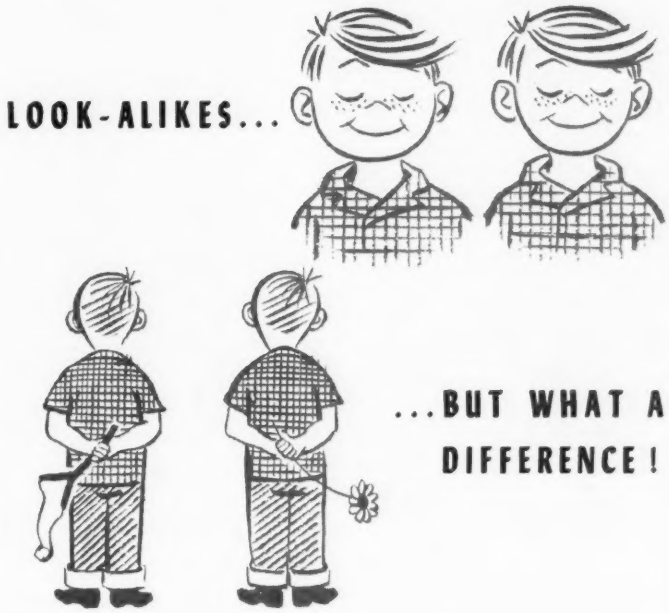
Paul H. Darmer has been named superintendent of pilot operations and equipment development in Chemstrand Corp.'s Acrilan acrylic fiber development group. **Louis D. Scott** has become director of Acrilan manufacturing.

AATT Council

(Continued from Page 61)

dent, Burlington Industries, Inc., New York.

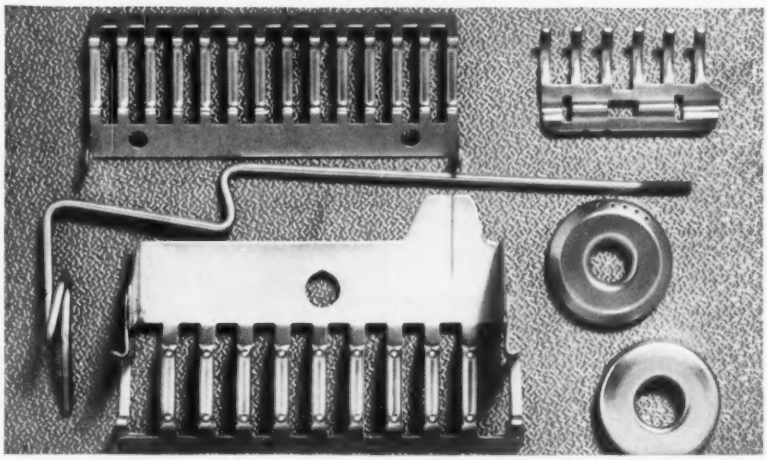
William A. Newell, director, Textile Research Center, North Carolina State College, Raleigh, N. C.; Edgar L. Schlesinger, assistant treasurer, United International Corp., New York; Arthur M. Spiro, vice president, Waumbec Mills, Inc., New York; Paul B. Stam, director of research, J. P. Stevens & Co., Inc., Greensboro, N. C.; Michael H. Strub, Jr., Manager, Technical Department, The Duplan Corp., Winston-Salem, N. C.; Philip Wick, president, Philip Wick Co., Inc., New York.



The fact that all Hard Chromium Plating looks the same may mislead you.

During 26 years of successful experience, we have proven many times to our customers (Some of whom have been with us for 20 years or more) that our fast, efficient service and "know how" mean "dollars in their pockets."

Why go through the trial and error method when we are experts in our chosen field . . . top quality Hard Chromium Plating.



The leading name in textile HARD CHROMIUM PLATING, both satin and polished finish.

Walhard

WALTON and LONSBURY

79 NORTH AVENUE ATTLEBORO, MASSACHUSETTS

E. I. du Pont de Nemours & Co.

Textile Fibers Dept Current Prices
Effective May 29, 1960

"Super Cordura"*

Den Fil	Turns/in	All Packages
1100-720	2	.57
1200-720	2	.57
1530-960	2	.57
1600-960	2	.52
1650-1100	2	.50
1800-1100	2	.50
2200-1440	2	.49
2400-1440	2	.49

Terms: Net 30 Days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corporation

Effective September 21, 1959

Unbleached Bright High Tenacity Yarns

Single End Beams and Cones—Type 100

Denier	Filament	Turns per Inch	Beams	Cones
1100	480	2.0 "Z"	.56	.56
1150	480	2.0 "Z"	.56	.56
1650	720	2.0 "Z"	.49	.49
1725	720	2.0 "Z"	.49	.49
2200	1000	2.0 "Z"	.48	.48
3300	1440	2.0 "Z"	.48	.48
4400	2000	2.0 "Z"	.48	.48

Tyrex

Tyrex Certified Viscose Tire Yarn

Denier	Filament	Twist	Beams	Cones
1100	720	Z	.57	.57
1650	1100	Z	.50	.50

Terms: Net 30 days f.o.b. point of shipment, title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points in continental United States except Alaska.
PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corporation

Effective December 23, 1959

Super Super High Strength Continuous Yarn Type 710		Cones	Beams
1100/720	1.6Z	.57	.57
1650/720	2.0Z	.50	.50
Tire Cord Fabrics			
Super Super High Strength Type 710			**Rolls**
1100/720			.69
1650/720			.59

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.
Prices are subject to change without notice.

CELLULOSIC STAPLE & TOW

ACETATE

Celanese Fibers Company

Effective March 2, 1959

Staple

(Most Deniers Available in Bright or Dull Luster)

Celanese Acetate Staple	
3, 5.5 & 8 Denier (Regular Crimp, Type HC, Type D)	$.36
2, 12 & 17 Denier (Regular Crimp, Type HC, Type D)	.37
35 Denier	.38
50 Denier	.40
Type F—5.5 & 8 Denier	.35
Type F—12 & 17 Denier	.36
Type K—(Available under Celanese License Agreement)	.39
⅜" to ⅞" length (All Deniers)	.03 (Premium)
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.29*

Tow (Celatow)

3, 5.5 & 8 Denier	$.37
2, 12 & 17 Denier	.38
35 Denier	.40
35 Denier Flat Filament Acetate Tow	.42
50 Denier	.42

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.
Prices subject to change without notice.
All previous prices withdrawn.
* No transportation allowed (F.O.B. shipping point.)
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

RAYON

American Viscose Corp. Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .33
"Viscose 22"	.33
Extra Strength	
1.0 Denier	.36
"Avisco XL"	
1.0 Denier	.42
1.5 & 3.0 Deniers	.39
"Avisco Crimped"	
1.25 Denier	.36
3.0 & 5.5 Deniers	.34
8.0 & 15.0 Deniers	.35
"Avisco Super L"	
8.0, 15.0 & 22.0 Deniers	.36

COLORSPUN STAPLE

Color	Code	Price
	1.5 Denier 1 9/16"	
Sea Foam	517	47¢
Spun Gold	614	47¢
Cascade	419	42¢
Silver Gray	208	42¢
Bridal Rose	710	42¢
Rosewood	835	47¢
Bisque	803	42¢
Champagne	833	42¢
Sandalwood	802	42¢
	3.0 Denier 2"	
Mint Green	505	47¢
Pale Pink	708	42¢
Bisque	803	42¢
Sandalwood	802	42¢
Gold	603	47¢
Turquoise	408	42¢
Wine	304	59¢
Gray	208	42¢
Spice Brown	800	47¢

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	
1.5, 3.0 & 5.5 Denier Per Filament	.35
9.0 Denier Per Filament	.37

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective 7/1/59

Rayon Staple

	Brt.	Dull
Regular Crimp		
1.5 and 3 denier	$ .33	$ .33
High Crimp		
4.5 denier	.34	...
6.5 denier	.34	.34
8 denier	.35	...
15 denier	.35	.35

Celanese Fibers Company

Effective May 1, 1959

Rayon Tow

	Bright & Dull
1.5, 3, 5.5 D.P.F. Total denier 200,000	.35
8 D.P.F. Total denier 207,000	.37

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.

Effective April 14, 1959

Rayon Staple

	Bright	Dull
1½ and 3 denier	$.33	$.33
Available in 1⅛", 1-9/16" and 2".		

Crimped Rayon Staple

3 and 5½ denier	$.34	$.34
Available in 1-9/16" and 3".		
3 denier		.34
Available in 2".		

Coloray® Solution Dyed Rayon Staple

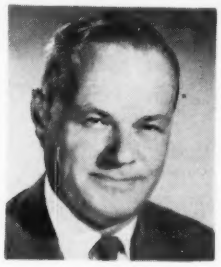
Color	Price per lb.
Black	39¢
Silver Grey	41¢
Mocha	41¢
Tan	41¢
Medium Brown	41¢
Aqua	42¢
Rose	42¢
Dawn Pink	42¢
Ecru	42¢
Dark Brown	42¢
Gold	45¢
Slate Grey	45¢
Sulphur	46¢
Nugget	46¢
Light Blue	46¢
Crystal Blue	47¢
Apple Green	47¢
Sage	47¢
Peacock Blue	48¢
Medium Blue	50¢
Indian Yellow	51¢
Dark Blue	51¢
Hunter Green	51¢
Turquoise	52¢
Malachite Green	53¢
Red	58¢

Karl B. Nixon has been appointed to the sales staff of Whitin Machine Works.

I. T. Meyer has retired from his position as vice president in charge of manufacturing at Industrial Rayon Corp.

P. L. Carter and **J. A. Carter** have retired from their respective positions at Carter Bros., Inc. The two brothers founded the firm in 1913.

Ralph Gossett has been appointed to represent Rhodia, Inc.'s Rhovyl fibers in Georgia, Alabama and Tennessee and **Charles E. Boger** will represent Rhovyl in North Carolina and Virginia. Rhodia, Inc. is the New York division of the French fiber producer, Societe Rhovyl.



H. C. Haller

James E. Ryan has been named to the newly created post of district manager of New York sales for American Cyanamid Co.'s Fibers Division. In the same division **Herbert C. Haller** has been named manager of the fibers application laboratory at the company's Bound Brook plant.

Dr. Sallie A. Fisher has joined Robinette Research Laboratories as associate director of research.

Vasser Woolley has been elected chairman of the board of directors and **Paul Seydel,** president, of Seydel-Woolley & Co. **David Meriwether** has been named Vice President.

Frederick F. Hand has been appointed group leader of nonwoven research and development at J. P. Stevens & Co.' Central Research Laboratories at Garfield, N. J.

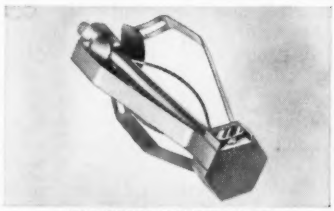
I. Rogosin, president of Beaunit Mills, Inc. has been elected chairman of the board of Tyrex, Inc., succeeding **Gerald S. Tompkins,** president of American Viscose Corp. **Hayden B. Kline,** chairman of the board of Industrial Rayon Corp. and **Maurice Winger, Jr.,** assistant to the president, American Enka Corp. have been named vice chairman and treasurer of Tyrex, Inc., respectively.

Deaths

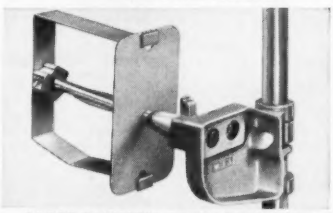
Ross C. Rodgers, 58, president of Scholler Brothers, Ltd.

HERE'S HOW TO HANDLE ANY PACKAGE WITH McBRIDE VERSATILE PACKAGE HOLDERS

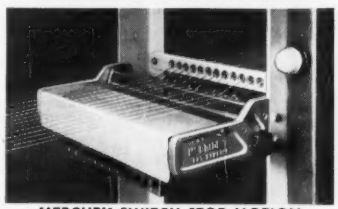
McBride Bowed Spring Spindle with cone and large package holders can accommodate every type of package used on Over End Take-Off today. Adapters feature the quick change design for instant placement or removal, to **cut down changeover time loss.**



UNIVERSAL CONE HOLDER



LARGE DIAMETER PACKAGE HOLDER



MERCURY SWITCH STOP MOTION

Let McBride study your creel requirements. You will be pleased with the improved efficiency, ease of operation, and rugged design of McBride creels. Creels for warping, weaving, winding, twisting, tufting, and knitting. Special laboratory warping units designed to suit your requirements.

Complete engineering service is part of every McBride installation

McBRIDE COTTMAN AVE. & WISSINOMING ST. PHILADELPHIA 35, PENNSYLVANIA

In Canada: Hugh Williams & Co., 27 Wellington St., E. Toronto 1, Ontario

In addition to the above, Black is also available in:
1½ den. 1⅛" — 5½ den. 3"
3 den. 1⅛" — 5½ den. 6"
3 den. 1-9/16"

Terms: Net 30 days f.o.b. LeMoyne, Alabama: Minimum transportation allowed to points in U.S.A. east of Mississippi River.

Corval® Cross Linked Rayon

Effective April 14, 1959

Man-made, cross-linked, cellulosic staple,
Bright and Dull, 1½, 3 and 5½ denier ..... $.40 per lb.

Topel® Cross-Linked Rayon

Man-made, cross-linked, cellulosic staple,
Bright and Dull, 1½, 3 and 5½ denier ..... $.37 per lb.

Terms: Net 30 days f.o.b. LeMoyne, Alabama; Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Fibres Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective November 3, 1958

REGULAR

1.5 denier Bright
1 9/16", 2" ..... .33

VISCALON 66 (Crimped)

8 denier 3" Bright ..... .35
15 denier 3" Bright ..... .35
15 denier 3" Dull ..... .35

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	.46	.46	....
Sandalwood	.46	.46	....
Nutria	.46	.46	....
Sea Green	.46	.46	....
Mint Green	.46	.46	....
Champagne	.46	.46	....
Midnight Black	.46	....	.46
Gold	.49	.49	....
Turquoise	.46	.46	....
Melon	.49	.49	....
Capri Blue	.46	.46	....
Charcoal Grey	.46	.46	....
Coco	.47	.47	....
Sable	.48	....	.48
Tangerine	.66	....	.66
Chinese Red	.66	....	.66
Larkspur Blue	.46	.48	....
Royal Blue	.66	....	.66
Lemon Peel	.55	.55	....
Kelly Green	.52	.52	....
Bitter Green	.66	....	.66

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

"Zantrel" Polynosic Rayon

Effective August 14, 1959

Man-made, polynosic, cellulosic staple.
Semi-Bright, 1 denier, 1 9/16" ..... $.50 per lb.
1½ denier, 1¼" and 1 9/16" ..... .47 per lb.
3 denier, 1 9/16" and 2" ..... .47 per lb.

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices — Effective Dec. 23, 1959

Rayon Staple

Super High Tenacity	Bright
No. 1 (Unshrunk)	
1, 1.5 & 3 deniers	.40
No. 2 (Preshrunk)	
1, 1.5 & 3 deniers	.40

Rayon Tow

High Tenacity	
2200 denier, 1.0 and 1.5 D/F	57.5
4400 denier, 1.0 and 1.5 D/F	47.5

Prices are subject to change without notice.

TRIACETATE

Celanese Fibers Company

Current Prices — Effective June 7, 1957

(Most Deniers Available in Bright or Dull Luster)

Arnel Staple and Tow

	Bright & Dull
Arnel Triacetate Staple	
2.5 Individual Denier	$.55
5.0 Individual Denier	.55
Arnel Triacetate Tow	
2.5 Individual Denier 114,000 Total Denier	$.60
5.0 Individual Denier 90,000 Total Denier or 180,000 Total Denier	.60

Packaged on Ball Warps

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

NYLON

Allied Chemical Corporation

Caprolan®

Current Yarn Prices: — Effective May 1, 1960

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb.
140	16	1½	Z	B	Cones*	$1.60
140	16	1½	Z	B	Beams	1.65
200	16	1½	Z	B	Cones*	1.49
200	16	1½	Z	B	Beams	1.54
200	32	¾	Z	B	Bobbins	1.49
200	32	¾	Z	B	Beams	1.54
210	32	1	Z	HB	Bobbins	1.49
260	16	1	Z	HB	Bobbins	1.49
420	64	½	Z	HBT	Bobbins	1.39
420	64	½	Z	HBT	Beams	1.44
520	32	1	Z	B	Bobbins	1.39
520	32	1	Z	B	Beams	1.44
840	136	½	Z	HBT	Al. Tubes	.97
840	136	½	Z	HBT	Beams	.97
1680	272	½	Z	HBT	Al. Tubes	.94
1680	272	½	Z	HBT	Beams	.94
1050	56	½	Z	HB	Al. Tubes	1.15
2100	112	½	Z	HB	Al. Tubes	1.11
4200	224	0	O	HB	Paper Tubes*	1.10
2100	408	0	O	HB	Paper Tubes*	.99
2500	408	0	O	HB	Paper Tubes*	.99
3360	544	0	O	HB	Paper Tubes*	.98
4200	680	0	O	HB	Paper Tubes*	.98
5000	816	0	O	HB	Paper Tubes*	.98
5800	952	0	O	HB	Paper Tubes*	.98
7500	1224	0	O	HB	Paper Tubes*	.97
10000	1632	0	O	HB	Paper Tubes*	.97
15000	2448	0	O	HB	Paper Tubes*	.97

Terms—Net 30 days.
Price subject to change without notice.
Bobbins are invoiced at 45¢ ea.
Aluminum Tubes are invoiced at 40¢ ea.
Beams are invoiced at $220.00.
Cradles for beams are invoiced at $53.00.
B—Bright
H—High Tenacity
T—Heat Stabilized
* Paper Tubes and Cones non-returnable, no charge.
** Type is used to describe luster and tenacity.
All prices quoted F.O.B. Shipping Point.
Minimum transportation charges allowed and prepaid in Continental United States, excluding Alaska.

American Enka Corporation

Enka Nylon Yarn Prices
Effective January 1, 1960

Den./Fil.	Luster*	Twist	Package	Price Per Pound Standard	Price Per Pound Sub-Standard
15/1	SD or D	0.5 Z	Tricot Spools	4.00	....
15/1	SD or D	0.5 Z	Pirns-2 lb.	3.89	3.69
20/1	SD	0.5 Z	Pirns-1 lb.	4.95	4.50
20/6	D	0.5 Z	Pirns-2 lb.	2.96	2.61
20/6	D	0.5 Z	Tricot Spools	3.07	....
30/6	SD	0.5 Z	Pirns-2 lb.	2.36	2.21
40/8	SD	0.5 Z	Pirns-2 lb.	2.01	1.91
40/8	SD	0.5 Z	Tricot Spools	2.11	....
40/8	SD-IC	0.5 Z	Pirns-2 lb.	2.10	2.00
40/10	D	0.5 Z	Pirns-2 lb.	2.06	1.96
40/10	D	0.5 Z	Tricot Spools	2.16	....
50/13	SD	0.5 Z	Pirns-2 lb.	1.91	1.76
50/13	SD-IC	0.5 Z	Pirns-2 lb.	2.00	1.85
70/32	B-SD	0.5 Z	Pirns-2 lb.	1.71	1.66
70/32	SD-IC	0.5 Z	Pirns-2 lb.	1.80	1.75
100/32	SD-IC	0.5 Z	Pirns-2 lb.	1.74	1.69
100/32	SD	0.5 Z	Pirns-2 lb.	1.65	1.60
140/64-32	B-SD	0.5 Z	Pirns-2 lb.	1.60	1.55
140/64-32	B-SD	0.5 Z	Tricot Spools	1.70	....
140/32-64	SD-IC	0.5 Z	Pirns-2 lb.	1.69	1.64
200/16-34	B	0.6 Z	Cones-4 lb.	1.49	1.44
200/16-34	B	0.6 Z	Beams	1.54	....
200/32	SD-IC	0.5 Z	Cones-4 lb.	1.58	1.53
260/16-34	B	0.6 Z	Cones-4 lb.	1.49	1.39
400/68	B	0.6 Z	Cones-4 lb.	1.39	1.29
520/32	B	0.6 Z	Cones-4 lb.	1.39	1.29

* Luster: B—Bright; SD—Semi-Dull; D—Dull; *

Pirns invoiced at 25¢ or 45¢ each, depending on type. Deposits refunded upon return of pirns in good condition. Cones are not returnable. Spools, Beams and Racks are deposit carriers and remain the property of American Enka Corporation.

Terms: Net 30 days from date of invoice. Minimum common carrier transportation charges will be prepaid and absorbed to first destination in the continental limits of the United States excluding Alaska and Hawaii. In prepaying transportation charges, seller reserves the right to select carrier used.

All prices subject to change without notice.

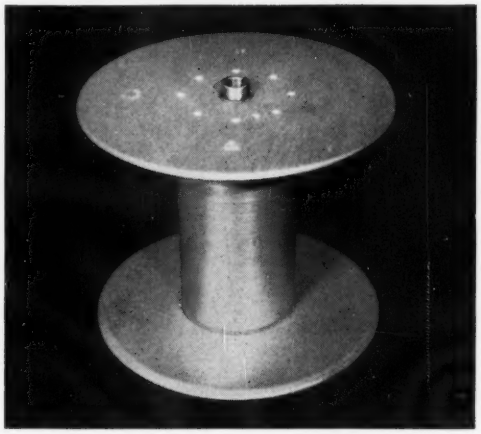
* B de B—White of Whites Color.

The Chemstrand Corp.

Current Prices — Effective January 15, 1960

Denier	Filament	Twist	Type	Package	Standard Price/Lb.	Second Price/Lb.
10	1	O	SD	Bobbins	$8.42	$7.81
15	1	O	SD	Bobbins	3.89	3.69
15	1	O	SD	Spools	4.00	....
15	1	O	Dull	Bobbins	3.89	3.69
15	1	O	Dull	Spools	4.00	....
20	7	Z	SD	Bobbins	2.91	2.61
30	10	Z	SD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	10	Z	SD	Bobbins	2.01	1.91
40	13	Z	SD	Bobbins	2.01	1.91
40	13	Z	SD	Spools	2.11	....
40	13	Z	SD	Warp Wind	2.01	1.91
40	13	O	SD	Draw Wind	2.01	1.91
40	13	Z	Dull	Bobbins	2.06	1.96
40	13	Z	Dull	Spools	2.16	....
40	13	O	Dull	Draw Wind	2.06	1.96
50	17	Z	SD	Bobbins	1.91	1.76
50	17	O	SD	Draw Wind	1.91	1.76
50	17	Z	Brt.	Bobbins	1.91	1.76

NO YARN TRAPPING WITH
BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN

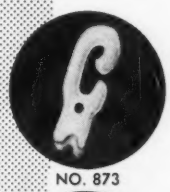


New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

Write us today for full details.

BW MACK ALLENTOWN BOBBIN WORKS, INC.
ALLENTOWN PENNSYLVANIA

IT'S THE FINISH
THAT COUNTS!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With thirty-five years experience in Textiles, we are in a position to suggest any particular type of guide for your requirements.
On standard and fast moving styles we are able to make overnight delivery.
Man-made fibers and high speeds of today made it necessary to develop guides that will stand up under these conditions. Our "CLOMA" Guides are made from a homogeneous composition that is hard, smooth and uniform, which means less replacement, better quality product. Where tension and wear is a problem, we suggest this type guides.

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We welcome an opportunity to serve you. Write today for samples, quotations and catalog.

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INCORPORATED 1954
P. O. BOX 85 ROCKVILLE CENTRE, L. I. N. Y.
ROCKVILLE CENTRE 4-0336
JESSE F. MADDEN
Formerly of
PAGE MADDEN CO.

Bibb's Bob Train

(Continued from Page 22)

The best way, he believes, to buy new machinery is to pay for it out of earnings. This at any rate is the Bibb way. Right now, Train is struggling with the decision whether Bibb should build a new finishing plant. The big question one has to decide when considering such major expansions, he says, is whether future earnings will pay back the outlay of cash.

But come what may, he believes that expansion is inevitable in the future of Bibb—the company today is just too big to consider any other course no matter how rigorous the road of growth may turn out to be. For the next five years, Train envisages growth and diversification that will expand the company's net by 15%. "Bibb," he puts it simply, "will have to run a lot faster in the future to gain a little ground." ■

Enka Outlook Appraised

It now appears that 1961 model automobiles will continue to carry Tyrex cord tires as original equipment, Philip B. Stull, president of American Enka Corp., told stockholders at the recent annual meeting in Enka, N.C. In commenting on the struggle between Tyrex and nylon for the tire cord market, Stull said that "the battle is now focussed on 1962 and beyond . . . While we continue to back Tyrex in this struggle, we will not be left out of this market should the fight be lost to nylon. The first units of our heavy denier nylon facilities should be completed this fall, and these facilities can and will produce nylon tire yarn."

Stull said that the real progress has been made in reducing the company's dependence on a single product. Over the past 5 years, tire yarn has dropped from 61% of total dollar sales in 1955 to 37% in 1959, while sales of rayon textile yarn during the same period dropped from 36% to 24%. Rayon staple fiber sales rose from 10% in 1957 to 12% in 1959, and nylon sales have increased from 2% in 1955 to 13% of the 1959 dollar sales volume. Plastic-covered wire and cable accounted for 14% of the total sales. The company looks for significant earnings from its wire and cable business, Stull said, and prospects are promising for the development of new dielectric products for its Brand-Rex Division.

New Packaging Tape

American Viscose Corp. has formed a new Industrial Packaging Department to market its latest product, Avistrap, an industrial packaging tape made from the company's high tenacity rayon cord. G. S. Tompkins, American Viscose president, told shareholders at the recent annual meeting that the tape is strong, lightweight, and flexible, and has been used for the past few months to strap 1,600-pound pallets of cellophane. Other advantages of avistrap are, he said, a reduction in damage to packages, and lower cost than comparable competitive strapping. The tape, which weighs 1/4 to 1/7 as much as steel strapping, of comparable strength, is being made at American Viscose's Lewistown, Pa., plant.

Robert K. Scharff has been named general manager of sales for the new department and Thomas F. Brastow is manufacturing manager. George J. Alles will serve as general manager of the department in addition to his other duties.

50	17	Z	Brt.	Warp Wind	1.91	1.76
70	20	Z	SD	Bobbins	1.71	1.66
70	34	Z	SD	Bobbins	1.71	1.66
70	34	O	SD	Draw Wind	1.71	1.66
70	34	Z	SD	Warp Wind	1.71	1.66
70	34	Z	Brt.	Bobbins	1.71	1.66
70	34	O	Brt.	Draw Wind	1.71	1.66
70	34	Z	Brt.	Warp Wind	1.71	1.66
70	34	Z	HB	Bobbins	1.76	1.66
70	34	O	HB	Draw Wind	1.76	1.66
90	26	Z	SD	Bobbins	1.76	1.66
100	26	Z	SD	Bobbins	1.65	1.60
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
140	68	Z	Brt.	Bobbins	1.60	1.55
200	34	Z	Brt.	Bobbins	1.49	1.44
200	34	O	Brt.	Draw Wind	1.49	1.44
200	34	Z	Brt.	Spools	1.54	....
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	O	HB	Draw Wind	1.49	1.44
210	34	Z	HB	Warp Wind	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
210	34	Z	RHB	Bobbins	1.59	1.44
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Beams	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
420	68	Z	RHB	Bobbins	1.49	1.29
520	34	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Tubes	1.39	1.29
630	102	Z	HB	Beams	1.39	....
720	140	Z	RHB	Tubes	1.04	1.01
720	140	Z	RHB	Beams	1.04	1.01
780	51	Z	HB	Tubes	1.39	1.29
840	140	Z	HB	Tubes	.97	.94
840	140	Z	HB	Beams	.97	.94
840	140	Z	HB	Cones	1.01	.94
840	140	Z	RHB	Tubes	.97	.94
840	140	Z	RHB	Beams	.97	.94
840	140	Z	RHB	Cones	1.01	.94
840	140	Z	HB	Paper Tubes	1.01	.94
840	140	Z	RHB	Paper Tubes	1.01	.94
840	140	Z	RHB	Textile Grade —W. W.	1.12	1.01
1040	68	Z	SD	Tubes	1.15	1.05
1040	68	Z	HB	Tubes	1.15	1.05
1050	170	Z	HB	Tubes	.97	.94
1050	170	Z	RHB	Tubes	.97	.94
1680	280	Z	HB	Tubes	.94	.91
1680	280	Z	HB	Beams	.94	.91
1680	280	Z	RHB	Tubes	.94	.91
1680	280	Z	RHB	Beams	.94	.91
1680	280	Z	RHB	Cones	.97	.94

* *Types:* D—Dull; SD—Semi-dull; B—Bright; H—High tenactiy.

Bobbins are invoiced at 25¢ or 45¢, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $95.00, $110.00, and $115.00, depending on type; and beams and crates for beams are invoiced at $220.00 and $25.00 respectively.

Prices subject to changes without notice.

Freight prepaid within Continental United States and Puerto Rico.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices — Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$8.05	$7.40
10-1	0	200	Bobbin	7.16	6.56
12-1	0	200	Bobbin	6.35	5.85
15-1	0	200	Beam	4.00	....
15-1	0	200	Bobbin	3.89	3.69
15-1	0	680	Beam	4.00	....
15-1	0	680	Bobbin	3.89	3.69
20-1	0	200	Bobbin	4.03	3.68
14-2	0.2Z	200	Bobbin	6.72	6.12
17-2	0.2Z	200	Bobbin	5.96	5.41
20-2	0.2Z	200	Bobbin	4.71	4.27
15-3	0.2Z	200	Bobbin	5.19	4.69
21-3	0.2Z	200	Bobbin	4.70	4.27
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Beam	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	0.5Z	680	Beam	3.07	....
20-20	0.7Z	209	Bobbin	6.00	....
28-4	0.2Z	200	Bobbin	2.81	2.61
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	....
30-10	0.5Z	300	Bobbin	2.51	2.36
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	....
30-26	0.5Z	200	Bobbin	2.49	2.21
30-26	0.5Z	200	Tricot Beams	2.59	....
40-1	0	100	Bobbin	4.03	3.75
40-7	0.5Z	200	Bobbin	2.11	1.91
40-10	0.5Z	200	Bobbin	2.01	1.91
40-10	0.5Z	200	Tricot Beams	2.11	....
40-10	0.5Z	280	Bobbin	2.01	1.91
40-13	0.5Z	200	Bobbin	2.01	1.91
40-13	0.5Z	200	Tricot Bms.	2.11	....
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	680	Bobbin	2.06	1.96
40-13	0.5Z	680	Tricot Bms.	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	100/200	Bobbin	1.91	1.76
50-17	0	200	Tubes	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
60-20	0.5Z	200	Bobbin	1.82	1.65
60-34	0.5Z	300	Bobbin	1.86	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0	100	Tubes	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0	105/205	Paper Tube	1.71	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	280	Bobbin	1.71	1.66
70-34	0.5Z	288	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
70-34	0	680	Tubes	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.60
90-26	0.5Z	200	Bobbin	1.76	1.66
90-26	0.5Z	288	Bobbin	1.76	1.66
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0	300	Tubes	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
110-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	100	Bobbins	1.60	1.55
140-68	0	200	Tubes	1.60	1.55
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0	205	Tube	1.60	1.55
140-68	0.5Z	288	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-20	1Z	100	Bobbin	1.49	1.44
200-34	0	100	Tubes	1.49	1.44
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0	105	Tube	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	100/200	Bobbin	1.56	1.46
210-34	0	300	Tubes	1.49	1.44
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	....
210-34	0	305	Tube	1.49	1.44
210-34	0.7Z	330	Bobbin	1.59	1.44
260-17	1Z	300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
420-68	1Z	300	Beams	1.44	....
520-34	1Z	300	Bobbin	1.39	1.29
630-102	0.7Z	300	Bobbin	1.39	1.29
780-51	1Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs. & Beams	.97	.94
1680-280	0.5Z	300/700	Al. Tbs. & Beams	.94	.91

Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
30-10	0.5Z	140	Bobbin	$2.71	$2.56
40-13	0.5Z	140	Bobbin	2.36	2.16
70-34	0.5Z	140	Bobbin	2.06	2.01
100-34	0.5Z	140	Bobbin	2.00	1.95
100-34	0	140	Tubes	2.00	1.95
200-20	0.7Z	140	Bobbin	1.84	1.79
200-34	0.7Z	140	Bobbin	1.84	1.79
280-17	1Z	140	Bobbin	1.84	1.79

Industrial Yarn				Price/Lb.
840-140	0.5Z	*707	Cone	.97
5040-840	0	*707	Paper Tube	1.01
7560-1260	0	*707	Paper Tube	1.00
10080-1680	0	*707	Paper Tube	1.00
15120-2520	0	*707	Paper Tube	1.00

* Made specifically for cordage use.

2520-420	0	700	Paper Tube	.99
4200-700	0	700	Paper Tube	.98
5040-840	0	700	Paper Tube	.98
7560-1260	0	700	Paper Tube	.97
10080-1680	0	700	Paper Tube	.97
15120-2520	0	700	Paper Tube	.97

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
Type 105—Bright, normal tenacity, low shrinkage (5-7%)
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 205—Semidull, normal tenacity, low shrinkage (5-7%)
Type 209—Semidull, normal tenacity, improved light durability and dye light fastness.
Type 280—Semidull, normal tenacity, improved light durability and dye light fastness.
Type 288—Semidull, normal tenacity, for Texturing.
Type 300—Bright, high tenacity.
Type 305—Bright, high tenacity, low shrinkage (5-7%)
Type 330—Bright, high tenacity, more heat & light resistant.
Type 400—Semidull, high tenacity.
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.
Type 707—Bright, high tenacity cordage yarn.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tube—40¢ each
Draw Winder Tubes—$.70 or $1.00 depending on type
Tire Cord Beams—$220.00 each
Cradles for Tire Cord Beams—$115.00 each
Tricot Beams—$95.00 each
Cradles for Tricot Beams—$130.00 each
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices — "Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Tubes 1st Gr.
30-14	0	Bright	55	$2.71
30-20	0	Semidull	56	2.71
40-27	0	Semidull	56	2.31
40-27	0	Bright	55	2.31
40-27	0	Dull	57	2.36
70-34	0	Semidull	56	1.91
70-14	0	Bright	55	1.91
70-34	0	Bright	55	1.91
70-34	0	Dull	57	1.96
100-34	0	Semidull	56	1.84
140-28	0	Bright	55	1.79
150-34	0	Semidull	56	1.79
220-50	0	Bright	51	1.76
250-50	0	Bright	55	1.76
1100-250	0	Bright	51	1.50
1100-250	0	Bright	52	1.50

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the Continental limits of the U. S., excluding Alaska.

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Any degree of color fastness. Packaged as desired.
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Rayon Corporation

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PLANT: 86 CRARY ST., PROVIDENCE, R. I.

U.S. Seeks Textile Data

A new series of textile production and inventories is to be made available by the Bureau of the Census, as a result of a recommendation by the Pastore Committee. To secure necessary data the bureau works closely with industry in designing these reports. Whenever possible they use trade association data in order to avoid duplication of reporting on the part of the industry. While cotton gray goods and yarn data can be obtained in this manner, no comparable information is available for manmade fiber gray goods and cotton finished goods. Therefore, the bureau is seeking this data directly from the industry. The forms for reporting this information are manmade fibers, silk, woolen and worsted fabrics (M 22 A) and finishing plant report (M 22 B).

The Census Bureau states that the completeness of the series depends upon each firm's prompt and accurate reply. While most of the data is already in their hands, they are lacking sufficient data to make the study complete. It is in the interest of the entire industry that the Census Bureau receive this information as soon as it can be supplied each month. The Census Bureau is anxious to assist by answering any question or helping solve problems which might arise pertaining to the reporting procedure.

Cotton Market Potential

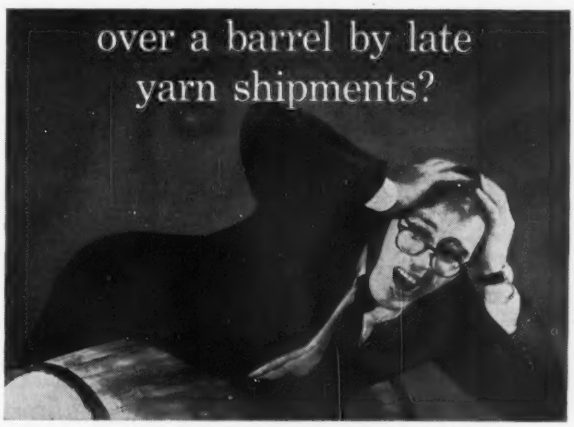
The vast market potential for cotton in the decade ahead and the challenges facing the industry were pointed up by Burris C. Jackson, keynote speaker at the recent 21st annual American Cotton Congress at College Station, Tex. Jackson called for sound government policies, research break-throughs, lower costs and more aggressive promotion. A combination of these, he said, could push consumption of cotton upward to 19 million bales or more by the end of the 60's.

A big buildup in research, which recognizes the price-cost squeeze on the producer as a paramount problem, is the cotton industry's most urgent need, Wm. Rhea Blake, executive vice president of the National Cotton Council, told the congress. Blake said growers are taking less for the cotton they sell while paying more for the production materials they must buy. It could cause prices to shoot up, he said, and undermine the whole broad effort to strengthen cotton's competitive position.

Other officials of the National Cotton Council told the congress that more than 10 million bales of cotton going into domestic consumption by 1965 is a possibility. Frank McCord said such an increase can be brought about through research, not only on wash-and-wear, but on ways of improving other properties of cotton. George S. Buck stated that within the past two decades research has reduced the cost of producing cotton by 9 cents a pound.

Olefin Staple Plant

Montecatini has placed in operation its new plant at Terni, Italy, for the production of 12 million pounds per year of Meraklon isotactic polypropylene staple fiber. The plant, reported to be the first fully commercial unit of its kind, will produce low cost, isotactic polypropylene staple fibers for use pure and in blends with wool, cotton, and rayon for fabrics, including knitwear, blankets, draperies, upholstery, carpets and rugs, men's and women's suitings, work cloth, and undergarments. Montecatini expects to raise the plant's annual capacity to more than 60 million pounds annually by 1962.



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Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 52—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.

Tubes are invoiced as a separate item at $.70 each.

* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN

The National Plastics Products Company—Fibers Division
Odenton, Maryland

Current Prices:

CONTINUOUS FILAMENT

Type	Twist p. i.	Natural	Colors
1240/10	3	$1.32	$1.37
750/20*	3	1.75	1.80

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

American Cyanamid Co.
Fibers Division

Effective Date: November 24, 1959

Cyanamid Acrylic Staple

	1st Grade Price (per pound)
2.0 Denier Bright and Semi-Dull	$1.28
3.0 Denier Bright and Semi-Dull	1.18
5.0 Denier Bright and Semi-Dull	1.18
15.0 Denier Bright, Semi-Dull and Dull	.93

Staple Lengths: 1½", 2" 2½", 3", 3½", 4", 4½".

Information provided on request for Deniers, Lengths and Lusters not listed above.

Prices are subject to change without notice.

Terms: Net 30 Days.

F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method) within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

The Chemstrand Corp.

Current Prices "Acrilan"*

Effective January 1, 1959

	Acrilan	Acrilan 16
2.0 denier Semi-Dull and Bright staple & tow	$1.18	$1.18
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.18	1.18
3.0 denier Bright & Semi-dull staple & tow	1.18	1.18
5.0 denier Bright & Semi-dull staple & tow	1.18	1.18
8.0 denier Bright & Semi-dull staple	1.18	1.18
15.0 denier Bright & Semi-dull staple	.93	.97

Terms: Net 30 days. Freight prepaid within Continental U. S. & Puerto Rico.

* "Acrilan" is Chemstrand's registered trademark for its acrylic fiber.

The Dow Chemical Company

Textile Fibers Department Current Prices

"Zefran"* Acrylic Staple

2.0 denier Semidull & Bright—Staple only	$1.28
3.0 denier Semidull & Bright—Staple only	1.28
6.0 denier Semidull & Bright—Staple only	1.18

100% Blends of ZEFRAN acrylic fiber (For the Woolen System)

Type W-2 (average denier of about 2.5)	$.99
Type W-4 (average denier of about 4.5)	.94

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route within the continental limits of the U. S., excluding Alaska.

* Registered trademark of The Dow Chemical Co.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

"Orlon"* Acrylic Staple & Tow

Type 42	Staple Length	Tow Blds.	1st Grade
1.0 Denier Semidull	1¼, 1½, 2, 2½, 3	420M	$1.28
2.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.28
3.0 Denier Semidull & Bright	1¼, 1½, 2, 2½, 3, 4½	470M	1.28
3.0 Denier Color-sealed Black	1¼, 1½, 2, 2½, 3, 4½	470M	1.63
6.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.18
6.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.55
4.5 Denier Semidull	1½, 2, 2½, 3, 4½	470M	1.18
10.0 Denier Semidull & Bright	1½, 2, 2½, 3, 4½	470M	1.18
10.0 Denier Color-sealed Black	1½, 2, 2½, 3, 4½	470M	1.55

High Shrinkage Staple price as Regular Staple

Type 25 $1.18

This product is designed for *Cotton/Rayon System* Spinning and is 2.5 denier, 1½" semidull regular shrinkage staple.

Type 38—4.1 Denier—Semidull—592M Tow $1.08

This product can be dyed, stretched and cut to produce staple which will shrink as much as 38% when subjected to heat.

Type 39 $.94

This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A $.99

This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.4) with a variable cut length.

Type 39B $.94

This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length

"ORLON SAYELLE"**

3.0 denier semidull variable 2½" to 5" average 3¾" staple	$1.53
6.0 denier semidull variable 2½" to 5" average 3¾" staple	1.50

F.O.B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "ORLON" is Dupont's Registered Trade-mark of its Acrylic Fiber.

"ORLON SAYELLE"** is Dupont's Trade-mark for its bi-component Acrylic fiber.

MODACRYLIC

Eastman Chemical Products, Inc.
Tennessee Eastman Co.

Current

"Verel"* Staple and Tow

Deniers	Dull and Bright
2 and 3	$1.02 per pound
5, 8, and 12	.92
16 and 20	.88
24 denier	.93

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

Union Carbide Chemicals Co.

Div. Union Carbide Corp

Textile Fibers Dept. Effective May 1, 1959

Dynel Staple & Tow

Natural Dynel	
3, 6, and 12 Denier, Staple and Tow	1.10 per lb.
24 Denier, Staple and Tow	1.05 per lb.
Dynel Spun with Light Colors:	
Blond, Pewter, and Gray	
3 and 6 Denier, Staple and Tow	1.30 per lb.
Dynel Spun with Dark Colors:	
Black, Charcoal, Brown, Caramel, Green, and Blue	
3 and 6 Denier, Staple and Tow	1.40 per lb.
Dynel Type 63 High Shrinkage (3 Denier only)	Add $.05 per lb. to above prices

Prices are quoted F.O.B. shipping point, freight prepaid our route, within continental limits United States, excluding Alaska and Hawaii.

NYLON

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1⅛"—4½"	None made	$1.33	$1.18
1.5	201	1⅛"—4½"	None made	1.35	1.20
2.3	420	1½" only	None made	1.28	1.13
3.0	100/200	1⅛"—4½"	430M	1.28	1.13
3.0	101/201	1⅛"—4½"	455M	1.30	1.15
6.0	100	1½"—6½"	330M	1.28	1.13
6.0	101	1½"—6½"	345M	1.30	1.15
15.0	100	1½"—6½"	425M	1.08	....
15.0	101	1½"—6½"	None made	1.10	....
15.0	600	1½"—6½"	425M	1.10	....
15.0	601	1½"—6½"	None made	1.12	....

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1⅛, 1½, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not heatset.
Type 101 Bright, normal tenacity, heatset.
Type 200 Semidull, normal tenacity, not heatset.
Type 201 Semidull, normal tenacity, heatset
Type 420 Semidull, high tenacity, high modulus, no crimp.
Type 600 Dull normal tenacity, not heatset.
Type 601 Dull normal tenacity, heatset.
These prices are subject to changes without notice.
Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Industrial Rayon Corp.

Effective August 18, 1958

Nylon Staple

1.5 denier	$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 denier	1.15 per lb.
15 and 22 denier	1.08 per lb.

Bright, semi-dull, and full-dull. Required lengths.

NYTRIL

Celanese Fibers Company

DARVAN

Effective Nov. 21, 1958

Type	Price Per Pound Net Crimp Set	Crimp Set
3, 4½ and 6 Denier	$1.45	$1.50
1½, 2 Denier	$1.50	$1.55

Du Pont Yarn Capacity

With current and projected expansions, Du Pont capacity for the new synthetics will approach 600,000,000 pounds annually in the 1960s, according to James Q. du Pont, a great-great-grandson of the founder. Speaking at the recent 57th annual convention of Phi Psi Fraternity in New York City, Du Pont said his company is continuing to build for the future with confidence and expects U.S. consumption of newer manmade fibers to pass the one-billion-pound-per-year mark in the current decade.

Citing the complexity of his company's venture into nylon more than 20 years ago, Du Pont said that the company spent 11 years and $27,000,000 before it manufactured the first pound in a commercial plant. "Today, as a manufacturer of seven textile fibers, our company has a very large investment in manmade fibers—larger than in any one of our other enterprises," he said. Du Pont pointed out that the very costly fiber-producing facilities can make only the fibers they are designed to produce, they cannot be used to make anything else.

Extra-White Nylon Yarn

American Enka Corp. has developed a new extra-white filament nylon yarn expressly for foundation garments and other intimate apparel fabric applications. A whitening agent is incorporated in the fiber in such a manner that it is not removed by ordinary scouring or wet processing. Designated as "Blanc de Blancs," the new yarn is available in a variety of deniers used for circular knit, leno and power net girdle blanks and related findings, as well as warp knit intimate apparel fabrics. *For further information write the editors.*

Scholler Will Upheld

Litigation concerning the charitable foundation established by the late Fred C. Scholler, founder of Scholler Brothers, Philadelphia, Pa., manufacturer of textile chemicals and finishes, reached another stage recently when the full Orphan's Court, Philadelphia, upheld the opinion of Judge Mark E. Lefever confirming the Scholler Foundation as a legal charitable trust.

Objections to the terms of Scholler's will, involving trust funds of millions of dollars, had been filed by cousins of the decedent who had charged the foundation to be a subterfuge and an illegal device. The Orphan's Court opinion is considered final unless contestants file further appeal to the Pennsylvania Supreme Court.

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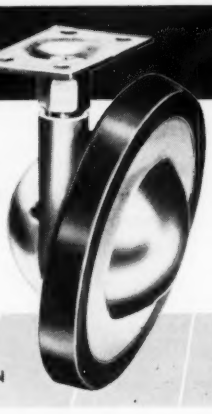

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1.5	Semidull	64	Tow only	550M	1.41
2.25	Semidull	64	1¼"-4½"	450M	1.41
3.0	Semidull	54	1¼"-4½"	450M	1.36
3.0	Semidull	61	1¼"-4½"	None made	1.36
3.0	Semidull	64	1¼"-4½"	450M	1.41
4.5	Semidull	54	1¼"-4½"	450M	1.31
4.5	Semidull	64	1¼"-4½"	450M	1.36
6.0	Semidull	54	1¼"-4½"	450M	1.31
6.0	Semidull	61	1¼"-4½"	None made	1.31
6.0	Semidull	64	1¼"-4½"	450M	1.36

* Type:
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3.0 denier ½" unopened	$.80 per lb.
3.0 " 1¼" unopened	.80 per lb.
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3.0 " 2" unopened	.80 per lb.
5.5 " 1" opened	.90 per lb.
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5.5 " 3½" unopened	.80 per lb.

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Current Prices: Saran Staple

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2Y—Upholstery	22	$0.70	$0.75
2Y—Upholstery	16	.74	.79
3Q—Industrial Fabrics	22	.68	.72
1C—Carpets	22	.68	.72
1M—Mops	22	.68	.72

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Calendar of Coming Events

Jul. 11-15—Gordon Research Conferences, Textile Sessions. Colby Junior College, New London, N. H.
Sept. 6-16—Production Engineering Show. Navy Pier, Chicago, Ill.
Sept. 7—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Sep. 7-8—Combed Yarn Spinners Association annual meeting. Greenbrier, White Sulphur Springs, W. Va.
Sep. 8—Textile Quality Control Association meeting. Clemson House, Clemson, S. C.
Sept. 8-9—Combed Yarn Spinners Association. The Cloister, Sea Island, Ga.
Sept. 9—AATCC Northern New England Section. Wachusett Country Club, West Boylston, Mass.
Sept. 10—AATCC South Central Section. Hotel Patten, Chattanooga, Tenn.
Sept. 14-17—Southeastern Maintenance & Engineering Show. State Fair Arena, Raleigh, N. C.
Sep. 15—Chattanooga Yarn Association annual outing. Read House, Chattanoooa, Tenn.
Sept. 22-23—First International Textile Dyestuffs, Finishes and Auxiliaries Exhibition. Free Trade Hall, Manchester, England.
Sep. 28-29—Chemical Finishing Conference, sponsored by National Cotton Council. Statler Hotel, Washington, D. C.
Sept. 28-30—N. C. Textile Manufacturers Association meeting. The Carolina, Pinehurst, N. C.
Oct. 3-7—Southern Textile Exposition. Textile Hall, Greenville, S. C.
Oct. 5—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Oct. 6-8—AATCC national convention. Sheraton Hotel, Philadelphia, Pa.
Oct. 18-19—Institute of Textile Technology Technical Advisory Committee and Board of Trustees meeting. Charlottesville, Va.
Oct. 21—AATCC Northern New England Section meeting. Dedham, Mass.
Oct. 22—Textile Operating Executives of Georgia slashing and weaving discussion. Georgia Tech, Atlanta, Ga.
Nov. 2—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
Nov. 10—Thread Institute annual meeting. Hotel Commodore, New York, N.Y.
Nov. 12—Textile Education Foundation, Inc. Georgia Tech, Atlanta, Ga.
Nov. 12—Alabama Textile Operating Executives carding and spinning discussion. Georgia Tech., Atlanta, Ga.
Nov. 28-Dec. 2—Power & Mechanical Engineering Exhibition. Coliseum, New York, N. Y.
Dec. 7—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.

1961

Feb. 7-9—2nd Canadian Textile Conference sponsored by Textile Technical Federation of Canada and Primary Textiles Institute. Queen Elizabeth Hotel, Montreal, Que.
Mar. 23-25—ACMI annual meeting. Fontainebleau Hotel, Miami Beach, Fla.
Apr. 24-28—Knitting Arts Exhibition. Auditorium, Atlantic City, N. J.

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